

ALL-NEW MAG! + **DIARY OF A GLASS WEARER**
Robo-eyes on, self-esteem off

Stuff



PLASTIC vs FANTASTIC

GALAXY S4 vs HTC ONE vs XPERIA Z

REVEALED!

GOOGLE'S PLAN TO TAKE OVER YOUR WORLD

PLUS!

AWESOME BIKES,
NINJA BLOCKS
& THE XBOX ONE



COOL LIST 2013

JAGUAR F-TYPE

THE WORLD'S
SEXIEST PHONE &
HOW IT WAS MADE

VINE'S CREATIVE
COLOSSUSES

THE WEB APP THAT
BRINGS KILLER GIGS
TO YOUR TOWN



haymarket

www.stuff.tv / July 2013 / £4.60

IMPROVE YOUR ST

New Fiesta *ST*

Official fuel consumption figures in mpg (l/100km) for the Ford Fiesta ST 1.6 EcoBoost (182PS): urban 35.8 (7.9), extra urban 58.9 (4.8), combined 47.9 (5.9).
Official CO₂ emissions 138g/km. Vehicle shown is the Ford Fiesta ST2 in Molten Orange with ST Style Pack (colour and Pack available at additional cost).

CRED.



Go Further



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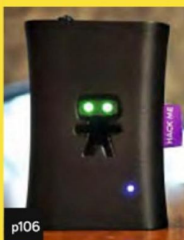
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07.13



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PLUG INTO STUFF'S SOCIAL NETWORK

OUR PRICES

Prices in Hot Stuff are RRP's. Prices in features, tests and Top 10s are the best we could find from a reputable online retailer at the time of going to print.



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SAMSUNG

THIS MONTH IN STUFF'S iOS APP EDITION



By the time you read this, we'll have changed our mind about the new Xbox One umpteen times. As it is, with the presses held by us for the launch, we've had a happy few hours arguing about it – people frequently jumping sides

as various aspects of Microsoft's new console were outlined. It's a contentious one, the One, for sure. Coverage begins on p8.

Let us know what your thoughts are via all the mediums below.

But it's been quite a month for exciting new tech. Samsung's ludicrously feature-packed S4 takes on its competitors in our **superphone Supertest** on p82. Google Glass, with all its privacy and self-esteem challenges, is here. Well, it's in the US, where our man-in-the-street has been pounding the pavement and casting Glassy stares. Read his **Glass diary** on p18. If that is too much like futuristic frippery, then check out **Ninja Block**, the ingenious £100 scalable, programmable home automation system. Remember we kept going on about the thingtnet? Well, it's here.

And if Ninja Blocks are too real, then take a mosey through the **Cool List** – an almost entirely cerebral exercise in the attribution of mysterious appeal to physical, virtual and, for 2013, retail spaces of our favourite area of study – the best of everything. Enjoy. 

Will Findlater, Editor / will@stuff.tv / [@willfindlater](https://twitter.com/willfindlater)

- More Xbox One game screens. Plus, exclusive behind-the-scenes video from the bike GPS test.
- Stunning hi-res and 360° photos of the hottest tech

Good news! *Stuff* is also available on **Google Play**, **Zinio**, **Exact Editions** and various other services.

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VOICE CONTROL

Walk into your living room, say 'Xbox on', then 'Xbox, show Dave', and kablammo – you're into an afternoon of *Man vs Food* repeats without lifting a finger. You can also switch between TV, games, web and Skype using only the sounds that come out of your face.



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27 PAGES
OF THE BIGGEST
STORIES FROM
PLANET TECHHOT
THREE
#1

MICROSOFT GOES IN ONE DIRECTION

The Xbox One will take
over your TV, your living
room and eventually
your life

Just to be clear, we mean Microsoft is going in One direction, not in One Direction. By which we mean it's taking a unified approach, not that it's packing itself into a microscopic submarine and injecting itself into Harry Styles' boyishly handsome face. You see, Microsoft has noticed that people spend about half of their Xtime doing something other than playing games, and it's only too happy to continue this trend by adding strings to the Xbox's bow. This boxy beast is a 4K Blu-ray player, a voice-controlled media streamer that serves up all your TV and movies, a phone (via Skype), a web browser and, yes, a games console, all rolled into One. Although if we're honest, the games – the jaw-dropping graphics, the persistent online worlds, the grandiose new stories, the multi-screen play, the frighteningly realistic new game engines – are the One thing we really want it for.

As hot as... Master Chief in 4K
Due November 2013 / xbox.com



For more views of the
Xbox One, download
the Stuff iOS app

THINGS WE KNOW

1 It has 3 operating systems

Alongside the proprietary Xbox OS, the One runs a version of Windows, which lets it do Windows 8-style screen-splitting. Keeping these two on talking terms is a third, facilitator OS, while the eight-core AMD processor and 8GB RAM do the heavy lifting.

2 It supports 4k

Well, sort of. The Blu-ray drive certainly can and will output 4K. As for games, we don't at time of writing know if the One will game in 4K. Yes, the difference in graphics is night and day, but that doesn't necessarily mean the resolution will go up, too. Although obviously we've got our fingers crossed.

3 It vampires on your digibox

Port-fondling nerds that we are, the first thing we did when we saw the One was to ogle its rear panel. With an HDMI in and an HDMI out, it acts as a middleman between your Sky/Virgin/Freeview/YouView box and your TV, serving up the same content but with nicer menus and voice control.

4 It lets you play other people's games, but not your old ones

There's a certain old-fashioned magic in letting someone else borrow your copy of something, but the One does this in a new-

fangled way, allowing you to lend out your games to your Xbox Live pals. One at a time, mind. What you can't do is play your existing 360 library on the One – not even Xbox Live Arcade downloads. Ouch.

5 It can see your heart rate

...and your face, which it can recognise and use to sign you in. The new Kinect is a frighteningly powerful all-seeing 1080p, 2Gbps eye with a 60% greater field of vision, the nouse to see six players at once, do 1080p video calls, *Minority Report*-esque motion control and read your family's thoughts as they sleep. Probably.

6 It has a proper controller

The Xbox 360's controller is a gamer's favourite, so it's good to see it untainted by a screen or touch controls. It does have new thumbstick rumble motors for targeted feedback. And, the battery has been moved so the controller balances better. Nice.



THING WE DON'T

PS4 vs XBOX ONE WHICH IS THE MOST POWERFUL?

Both the PS4 and the One have an 8-core processor made by AMD, plus 8GB RAM. However, while the One's memory is of the DDR3 type that you'd find in most desktop PCs, the PS4's is of the more powerful GDDR5 type found in graphics cards. This could translate to better performance, and while Sony has banded its teraflops (the number of calculations the PS4 can make in a second) about, Microsoft has stayed strangely quiet on the subject, indicating it might not be able to match Sony's figure. If we had to put money on it we'd say the PS4 is likely to be the more powerful machine, as in the last generation. But it may be that, just like the previous console generation, it's the less powerful machine that offers the better gaming experience.

WHAT WE'LL PLAY



● Forza 5

The sixth instalment in the Xbox Xclusive racing franchise will be a launch title for the One, gridding up with the PS4's *Gran Turismo Sport*. As with the preview of fellow futuristic megaracer *Drive Club* at the launch of the PS4, the focus is on exquisite realism, with details finer than a gnat's eyelash crisply picked out.

Download the Stuff
iOS app for more Xbox
One screenshots



● Quantum Break

This follows the trail blazed by *Defiance* into 'transmedia', which is suit-patter for something that's both a game and a TV show. With the newly spruced Xbox Live hosting persistent game worlds, the show will affect what happens in the game and vice versa. Expect lots of chrono-twisting from the bullet-time-inventing makers of *Max Payne*.



● Call of Duty: Ghosts

With perhaps the most impressive next-gen graphics we've seen so far, the new *CoD* puts a new engine to startling effect. The detail goes down to individual leaves and the little screws on your gun, while environments are modifiable and highly destructible. It also promises an emotionally charged script from *Traffic* scribe Stephen Gaghan. And it's got a dog in it.



● RYSE

This Kinect-only hack 'n' slash transports you to a catastrophically divided Rome, in which your job is to stab, punch, cleave and generally offend against your fellow historical figures. If you're really handy with a sword, you might even get them to lend you their ears. This should be a good game for showing off your new Kinect's ability to measure the force of a punch.

HOT
THREE
#2NOKIA'S BACK IN
BLACK (OR SILVER)

Nokia Lumia 925

As far as we're concerned, Nokia's last great Lumia was the N8, all the way back in 2010. That's because the N8 was a sweet example of the two things Nokia does best: delectable design and class-leading camera tech. So it was with great relief that we picked up the 925 and found it to be, like the N8, a handsome slice of metal and, like the N8, sporting an exceptional camera. Unlike its Symbian great-uncle, however, the 925 can do astonishing things with its shots, auto-editing them to a professional level in moments. And it has Windows Phone 8, with the specs and screen to make it shine. There are also optional back covers that give you wireless charging ability and let you ruin the aesthetics with bright yellow and red colours.

Ashot as... Finnish smoked reindeer pizza

Due June 2013 / nokia.com



SHOOTY AND SWEET

Smart Shoot

On by default, SmaShoo (as we've started calling it) takes many pictures so you can swap faces around, and erase randoms who stumble into shot.

Motion capture

Again, a burst of photos but stitched together to show the moving object multiple times in the frame. You can pick one frame to be the central focus.

Zany effects

Pick out a splodge of colour in an otherwise monochrome shot, or add motion blur to define your subject. (Don't try referring to them as 'art'.)





HOT
THREE
#3

TOUGHENED GLASS

Recon Instruments Jet

It used to be that if you wanted to wear a computer on your face, you had to cut two eyeholes in your laptop, tie it to your head with some bungee cord and prepare for people to think, quite accurately, that you were insane. But now mobile computing has taken over the world and a power-sipping Android PC is small and light enough to be supported by your ears and nose, you'd better get used to seeing faceputers on people who aren't mad. And while it might look a bit like something Dog the Bounty Hunter would wear, the Jet is an extreme sports Glass—a-like that has sane reasons to recommend it: a display that switches off if you're not looking at it, GPS, an altimeter, an HD camera, an ANT+ receiver and a six-hour battery life. Snowboarding and reading emails at the same time? Crazy!

As Hot As... Diane Youdale (Jet from *Gladiators*, 1992–96) hosting a millennium barn dance at the Yeovil Aerodome
Due winter 2013 / jet.reconinstruments.com

THE WORLD'S FASTEST CSC

Olympus PEN E-P5

£900 (body only) / olympus.co.uk

Olympus' new PEN takes the photo smarts of the excellent OM-D, packs them into a smaller, lighter body and speeds it all up. What's not to like?

● It's fast

With a mechanical shutter that flicks open and shut at a maximum speed of 1/8000, the E-P5 can freeze the beating wings of a hummingbird, or even capture the moment between your parking ticket expiring and a warden appearing. With fast autofocus and the ability to shoot 9 RAW images per second, it's quicker than a cheetah driving a Bugatti Veyron down the aisle of a jet that's being piloted by Usain Bolt.

● It's sharp

With APS-C compacts now in abundance, you can buy a smaller camera with a bigger sensor, but Micro Four Thirds is not to be sniffed at. Especially when it's the same 16.1MP Micro Four Thirds sensor as the superb, *Stuff*-Top-10-crested OM-D. The MFT system benefits from plenty of good, affordable lenses, too.

● It's metal

Apparently they do build 'em like they used to: this PEN celebrates the 50th birthday of the PEN F, Olympus' original pocket-friendly lens-changer. The old-school metal body has no visible screws except for those on the base, but it does have proper metal dials, with an optional grip made from an ancient material known as 'wood'.

● It's not cheap

You can buy a full-frame DSLR for what you'd spend on the PEN and a couple of lenses, but it can justify the expense. Your £900 buys you 35-point autofocus, 5-axis image stabilisation, art filters, programmable dials and a sensor that Olympus says has been 'individually hand-tuned', like it's a classic sports car or something.



YOUR STARTER FOR PEN...

Wireless control

Use the companion iOS / Android app and the E-P5's built-in Wi-Fi (no adaptors here) to focus, shoot and view remotely. You can geotag and upload to the web, too.

Macro magic

The 35-point Fast AF allows macro fans to pick out one very small point, such as the beady, hungry eye of an undernourished shrimp, for a sweet bokeh-ful close-up.

Dial be back

A pair of metal dials and a switch on the back offer instant access to speed, ISO, aperture and white balance – impressive manual control for serious snappers.

Berry nice BLACKBERRY Q5

Teenagers. If you can't beat 'em, join 'em. And when we say join 'em, we mean get the same phone as them, which will often be something from the BlackBerry 10 range. What we also mean is that you can get a very similar phone to the upmarket Q10 (see p101), with a square, 3.1in 720p touchscreen, revamped OS and a big, if not removable, 2100mAh battery, for somewhere around half the price. We don't mean join 'em on the dancefloor or at the back of the bus. That would be a little bit weird.

£tba (due July) / bb.com



Easelrider ACER ASPIRE R7

It's always the way: engineers design something clever, and marketing people give it a stupid name. Take the R7: it's a 15in Ultrabook with up to 12GB of RAM and an Intel Core i5 CPU. It's also designed to make the most of Windows 8's touch-tastic skills, using a strong but smooth hinge that allows the 1080p touchscreen to sit forward, so you can go from typing to swiping without really moving your hands. Clever. And what have the marketing boys called it? An 'Ezel' hinge. Those guys are worth every penny.

£900 / acer.com



↓ DROP EVERYTHING AND DOWNLOAD... SOUNDHALO £free / Android

It's a paradox of the digital age: everyone hates people who take videos with their phones at gigs, but there are so many phones being waved in the air that everyone must be doing it – perhaps even those people who complain about it. We can't outlaw it, but Soundhalo might stop it by offering an alternative: high-def videos of the gig you're at are synced to your phone moments after each song finishes. So, providing you don't lose your mobile in the mosh pit*, you can relive your favourite gigs without ruining everyone else's view.

*Current total number of phones lost by Stuff's Will Findlater at gigs: 47/309

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We're not saying your birdwatching exploits are lies. We believe you when you say that you saw the distinctive dance of the Prancing Chough. Your audio recording of the last-remaining Coughing Bittern is fascinating. As is your Janus-Faced Marmot-Owl sketch. Just, please, take this pair of DEV-50s with you next time. In addition to 25x magnification they record in 1080p and 3D, with optical image stabilisation and continuous autofocus. Maybe then we'll sign off your sighting of a Snake-Eating Mega-Crow. **US\$2000 / sony.com**



START MENU

The month's best concepts, start-ups, crowdfunded projects and plain crazy ideas



Empowered USB hub

SIVA CYCLE ATOM

US\$95 / sivacycle.com

Solar gadget chargers are great if you live in California, but the anaemic excuse for sunshine in the UK renders them useless. This lightweight box attaches quickly to your bike's rear hub and juices up its own 1300mAh battery, or any 5V, 500mA USB device (iPhone, yes; iPad, no), or both, all from the power of your spinning legs, so you can ride all day and never get a flat. Battery, that is.

Status

Funded (kickstarter.com)



This thing really blows

BBQ DRAGON

US\$50 / bbqdragon.com

There are two ways to fast-track a barbecue. Spend ten minutes huffing and puffing over the coals until you pass out from hypoxia and faceplant on to the flames. Or, cover the coals in a flammable chemical and totally remove your eyebrows. A safer, smarter alternative is this heat-resistant, clip-on, adjustable fan which breathes oxygen into the heart of the beast, creating cook-ready coal in minutes.

Status

Awaiting funding (kickstarter.com)



Rex success

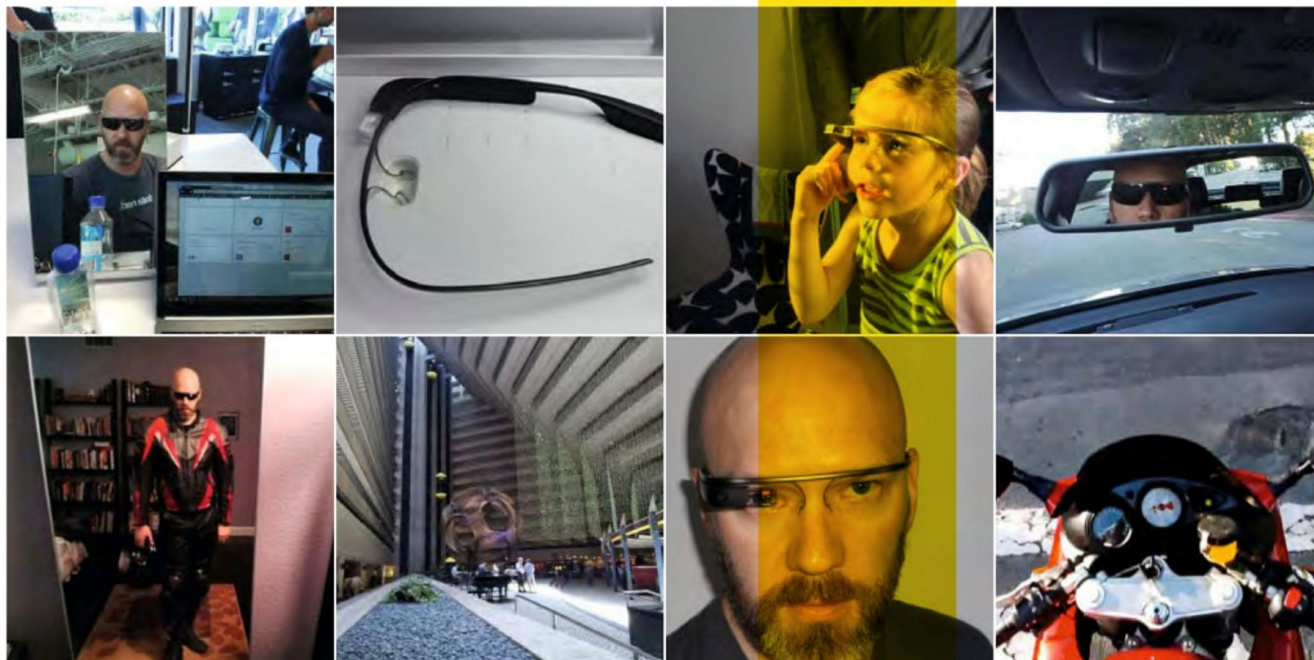
CHRISTOPHER WALKEN REX

Epoa / indiegogo.com

After seeing rich, yet unimaginative kids in the documentary *Queen of Versailles*, Ethan Cyr decided that if he only had US\$750, he would build a 13-foot high model dinosaur with the face of Christopher Walken. The magic of crowdfunding is such that, at time of writing, Christopher Walken Rex has received several times its original budget. Which jointly justifies both crowdfunding and life itself.

Status

Funded (indiegogo.com)



THE GLASS DIARY

Brandon Allgood is living a life behind Google Glass. Three weeks in, is it the future or just a Segway to nowhere?

● GETTING GLASS IS A THRILL

I collected mine from a pick-up party at Google HQ, which included champagne, grinning Googlers wearing Glass and my own personal Glass guide. Sergey Brin, the brainbox behind Glass and all things X at Google, was also roaming about performing handstands, which is apparently quite normal for him.

● IT PLAYS BETTER WITH ANDROID

After the initial high came the first low – at least for me. You need an Android phone to get turn-by-turn navigation and send texts. I only have an iPhone. The Android app also assists in configuring Glass and enabling apps, but the myGlass website does this, too.

● WEARING IT FEELS FINE...

The device itself is quite comfortable. The display sits just above your right eye's normal field of vision and looks lovely and sharp – although without the visors in I still can't shake visions of Steve Martin's Opti-Grab from *The Jerk*.

● ...BUT GET USED TO THE STARES

I've become a minor celebrity in my local town. I don't mind the stares and I love a geeky chat about Glass, but in the end I find myself avoiding eye contact a lot of the time. Although with

the polarised lenses in, it took a friend five minutes to notice I was wearing it. I couldn't get away with dark lenses in today's meeting, though, and there were plenty of uneasy jokes about me taping everything. Using the toilet at a conference I was met with less-than-favourable comments and looks. I've now learned to slide Glass to the top of my head while answering nature's call.

● IT'S LIKE HAVING A SERVANT

Glass responds to voice commands. It generally works well, although it will also pick up what those around you say – a foible your friends will be all too eager to take advantage of when they find out about it. You can also operate Glass using the touch-sensitive panel on the right arm, and this is arguably even more natural.

● AS A CAMERA, IT NEEDS WORK

Glass has a convenient shutter button on the top for its 5MP camera, but I'm still reaching for my phone first out

habit. There's no way to frame the shot, so I've found myself needing to take three photos each time – but when you get it right, the pics are on a par with those of the iPhone 5. It struggles a bit in low light, though, and doesn't have a flash. A head torch fixes the problem, but I now look like a nerd straight out of a John Hughes film.

● IT KNOWS WHAT YOU'RE THINKING

I discovered Google Now on Glass when it showed me my route to work without any prompting. It also gives you info on restaurants, weather and anything else it thinks might be useful, based on where you are and what time it is. Google Now + Glass = a killer combo.

● FINALLY – A USE FOR GOOGLE+

Before Glass I didn't really use G+ at all, but it's so well integrated, with automatic photo and video posting, that since getting Glass I've completely broken my Twitter addiction. I even took my mum on a motorcycle ride into the hills outside San Francisco via Google+ Hangouts. She could see every turn and I could talk to her live, which is the closest she'll ever get to being on a motorcycle with me.

● YOU'LL GET USED TO IT QUICKLY

Google Glass has now melded into my routines and habits. People at work comment that they don't notice it any more. In fact, it has seamlessly become part of my everyday life.

"I TOOK MY MUM ON A MOTORBIKE RIDE INTO THE HILLS OUTSIDE SAN FRAN VIA GOOGLE+ HANGOUTS"

For more on Google's plans to take over the world, turn to page 24

Bowers & Wilkins



Air your tunes

Z2 Hear everything, anywhere. Z2 gives you a remarkably rich, detailed sound, and all from a versatile speaker that's perfect for any room in your house. Play via the Lightning™ connector dock

or stream music wirelessly using your iPhone®, iPad®, Mac® or PC. Music is everywhere. How you play it is up to you. **Listen and you'll see.**

bowers-wilkins.co.uk

iPad, iPhone, AirPlay, Lightning and Mac are trademarks of Apple Inc., registered in the US and other countries.



AirPlay®

With Lightning™ connector

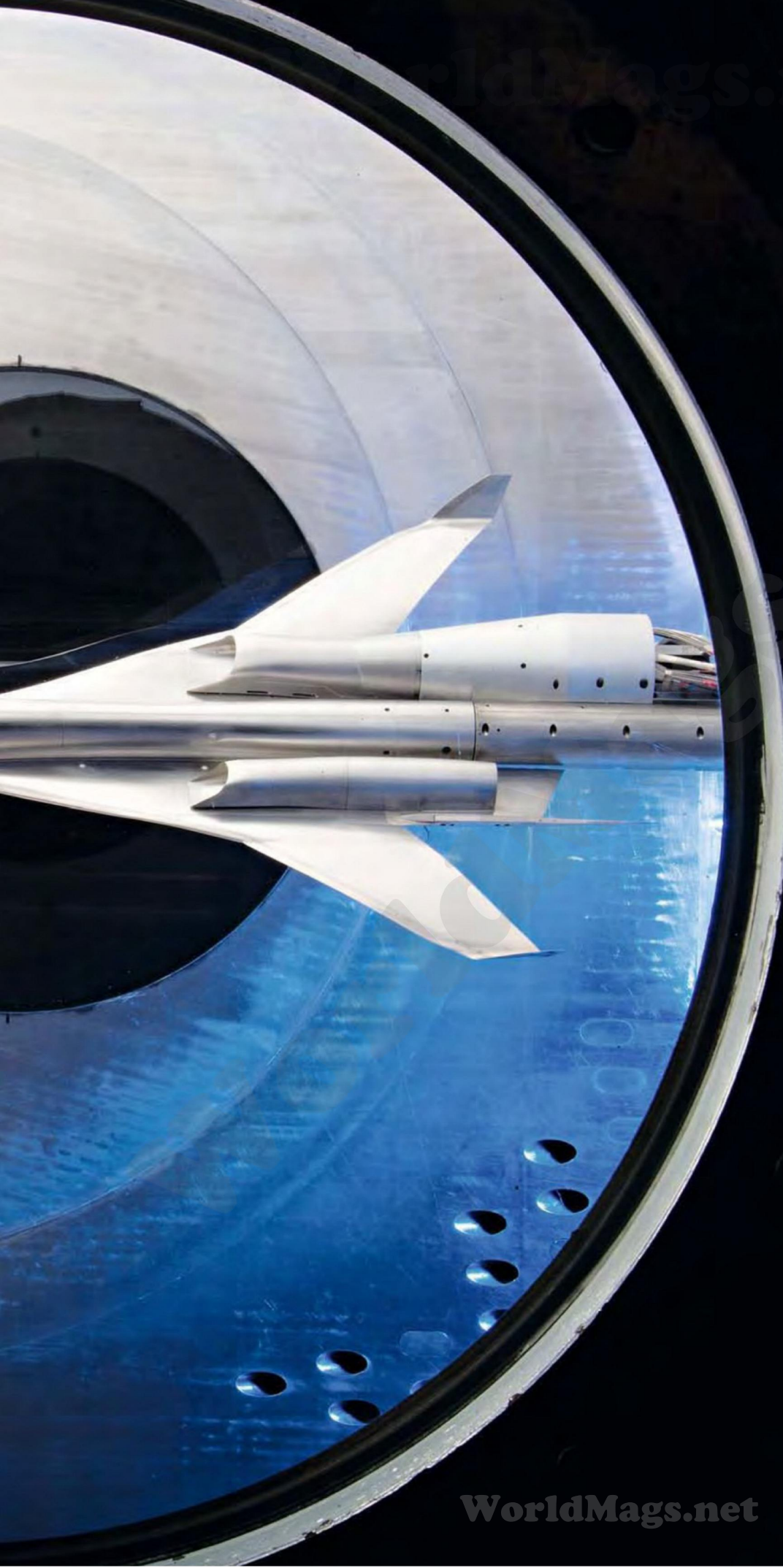
WorldMags.net



EYE OF THE STORM

Seen through a circular porthole in one side of the supersonic wind tunnel at NASA's Glenn Research Center, this scale model of an experimental Boeing supersonic aircraft looks to be gliding peacefully through space. Inside, it can get a bit blowy, with over 1300mph of breeze at full power. It's a handy tool for finding out what would happen when you change the size of your air intakes at Mach 2, without the risk of spraying oneself over a large area of the ground below. Useful stuff, but we hope they're also working on the use of electronic devices during take-off and landing.

[Picture NASA]



PEBBLE ROCKS

The initiator of the any-minute-now smartwatch revolution just got a lot smarter thanks to an SDK which allows Pebble apps to communicate fully with iOS or Android ones. That means future apps will allow the watch to control the phone and vice versa. This is Dick Tracy calling...



ADOBE STOPS SELLING PHOTOSHOP

Why would anyone stop selling a piece of software so popular that it has become a verb in its own right? Because it's renting it out. Now, instead of Creative Suite costing more than the computer you run it on, you pay Adobe a subscription, making its apps a lot easier to afford.

Windows 8.1

CYAN OF THE TIMES

Windows Blue — now officially confirmed as the less colourful Windows 8.1 — will be heading to your Win 8 PC this year, with a preview available from 26 June. It's an upgrade to both Win8 Pro and RT... but will it bring back your precious Start button? The rumours say no, but other tweaks suggest MS is listening.

GTi IS BACK



PEUGEOT RECOMMENDS TOTAL Official Fuel Consumption in mpg (l/100km) and CO₂ emissions (g/km) for the 208 GTi are: Urban 34.4 (8.2), Extra Urban 60.1 (4.7), Combined 47.9 (5.9) and CO₂ 139 (g/km).

NEW PEUGEOT 208 GTi

MOTION & EMOTION





At home on the range ARCHOS CHEFPAD

Oh, we know what you're thinking. You've already got an iPad with some cooking apps on it, so why would you need a cooking-specific Android flatputer with recipe apps, a special stand and a splashproof case? Well, you know how you always prop up your iPad on a pile of raw chicken when you're cooking? And how you can't run it under the tap to rinse off the giblet smears? And how you've had salmonella four times this year? One word for you, my friend: ChefPad. Or is that two?

£150 (due August) / archos.com

A home on the range SQIGLE EARL

If you're going to make your tablet a bit rugged, don't just add a gimmick and hope for the best. Make it completely different. Make it really specific – specific to Ray Mears, even. That's just what Sqigle has done. Earl is a waterproof, solar-powered Android tablet with a backlit e-paper screen and a 20-hour battery life. It won't play games or make the web look much good, but with custom off-road maps and GPS, it'll guide you as surely as the strong, warm paw of Mears himself. US\$250 (due winter) / meetearl.com



FUTURE STUFF NOISE-CANCELLING HEADLIGHTS

Will Dunn, for whom today is just another day – a long, long time ago

Driving at night, with the rain streaming towards your windscreen out of the blackness and the muffled whoosh of water under your wheels, it can feel like you're in a movie. A movie in which you're a lone FBI agent driving to a disused truckstop in the middle of Nowhere, Illinois to get sensitive documents from a man with no name. Until the plot suddenly changes, that is, and you're in a movie in which you play a wet, frightened person who's just driven their mum's car into the back of a lorry.

The problem is that while the headlights on the front of your car do a great job of illuminating the road in front of you, they also light up the falling rain, creating a shimmering curtain of bright specks that gets in the way of the hazards you need to see. Not for much longer, however. Researchers at Carnegie Mellon University have been working in collaboration with Intel to develop a headlight that is more like a combined camera and projector. The camera tracks the individual raindrops (or snowflakes in winter), passes

this information to the processor, which tells the projector to black out the pixels where each raindrop is, and display bright white everywhere else. The result is a headlight that makes rain invisible.

As I see it, though, that's just the beginning of smart headlight skills. With a pair of powerful projectors on the front of your car, you'd surely have the makings of a go-anywhere, 3D, drive-in cinema. All you need is a bedsheet. Just don't beam *Fast and Furious 6* on to the back of a moving lorry, eh?

LOGIN TO EVERYTHING

Google is adding good reasons to sign into its services: its overhauled Maps will give you rich data based on people in your Circles, bringing together social networks and the real world in a way Facebook can't match. Gmail will let you use Google Wallet to send money as a Gmail attachment, which PayPal can't do. And that's just the start...

MUSIC

Google's YouTube is already the biggest music streaming service, but it would rather you paid for your tunes. Its Play Music All Access combines the unlimited library of Spotify with the music-discovering endless radio of Last.fm, and Rdio's free trials. Time will tell how it fares against Spotify (only 25% of whose users pay), and iTunes, which is pricier but lets you keep your downloads.

TALKING

In a challenge to Microsoft's Skype, you can now make Google Voice calls from Google+. Google's superb voice search can also now be used in a web browser, without even pressing a button – in Chrome, you just say, "OK Google", and your search is launched. Which admittedly could confuse optimistic people saying, "It's OK, Google is bound to start paying its taxes soon."



HOW GOOGLE PLANS TO TAKE OVER YOUR WORLD

Google may not have unveiled any new gadgets at this year's I/O, but what the Big G did announce was more revealing: a bid to become the nexus of your technological existence, whatever hardware you choose

PHOTOS

As if it wasn't enough for Google to take down Skype, PayPal, Facebook, Spotify and the rest, the web giant has now also set its sights on creative software house Adobe (and possibly Nokia). Google+ Photos now includes the chest-bumping Auto Awesome mode, which automatically combines pictures to make new shots, motion GIFs or panoramas. So long, Photoshop.

ROBO-BRAINS

In one of its most futuristic schemes, Google and NASA are forming something called the Quantum Artificial Intelligence Lab. The plan is to develop a new type of AI that will live in a quantum computer built by D-Wave Systems. This unimaginably powerful machine intelligence will have enslaved all humanity by 2025. Then you'll really have to use Google+.

GAMING

The most significant indication of Google's cross-platform ambitions is its Play Game Services. It's a set of tools for building social features into games – cloud saves, achievements and real-time multiplayer are now supported. Crucially, though, they're not limited to Android; they're supported on iOS and the web, too, allowing Google to quietly insert its tentacle into whatever you're gaming on.

Google is bigger but that doesn't make it badder

SIMON O-W

@simon_OW



Google didn't produce the first search engine, online maps, webmail service or social network. It's just a business run by people who are brilliant at doing what other tech companies do, but better, and for free. It's not surprising that Google is branching out.

But is that a bad thing? Its headline-grabbing X Projects may have a little of the supervillain about them, but there are also large sections of the techosphere that Google ignores: it doesn't have a full-strength desktop OS, it's never made any mass-market hardware and it's unlikely to make any

specialist software such as Final Cut or Lightroom. Mainly what Google does is make your smartphone more useful, and if this requires Google+, I don't see it as people being forced on to an unpopular social network. I see it as people being given a good reason, for the first time, to start using it.

SONY

make.believe

sonymobile.com

experience the best of Sony in a smartphone



The sleek and durable Xperia™ Z brings together Sony's expertise in design, technology and innovation. When you're out and about, the 13MP camera takes crystal clear pictures, even in low light. And spilt drinks or sudden downpours aren't a problem, as the Xperia™ Z is water resistant to a metre.

BE MOVED

XPERIA



Xperia™ Z. Available to buy now.

In compliance with IP55 and IP57, Xperia Z is protected against the ingress of dust and is water resistant. Provided that all ports and covers are firmly closed, the phone is (i) protected against low pressure jets of water from all practicable directions in compliance with IP55; and/or (ii) can be kept under 1 metre of freshwater for up to 30 minutes in compliance with IP57. Icons are for illustrative purposes only. Sony and "make. believe" are trademarks or registered trademarks of Sony Corporation. Google Chrome and Google Play are trademarks of Google Inc. All other trademarks are property of their respective owners. © 2013 Sony Mobile Communications AB.

DUE
SEPT

FIRST LOOK FIFA 14 EA.COM

Not many footballers are able to completely reinvent themselves as their careers go on. Sure, Ryan Giggs has managed to swap running down the wing for running the game from the centre of midfield but it's unlikely we'll see Messi pull on a pair of goalie gloves when he hits 34 (although a tenner says he'd still be awesome at it). *FIFA* is the same every year – it's a case of evolving rather than reinventing. This season EA's had the ol' pig's bladder in a virtual wind tunnel and completely revamped *FIFA 14*'s ball physics. Shots now dip and swerve, and through-balls

arc gracefully into the path of your forward (or agonisingly into the arms of the 'keeper). Player movement has also been adjusted so that a squeeze of the left trigger will cause your player to use their body to protect the ball, whether they're shepherding it out of play, waiting to receive a pass or running down the wing with it at their feet. Sprinting's changed too, with agility and momentum playing a much larger part in a player's ability to change direction at speed. That means you're no longer locked into wide, arcing runs when going at

full tilt; but try to turn too sharply and you might lose control or leave the ball vulnerable to opposition defenders. The intelligence of your computer-controlled teammates has been upped too, so they'll mark more tightly and track opposition runs more intelligently, rather than letting a player go and hoping that a teammate will pick them up. If you do lose the ball, the new 2nd Chance Tackles at least increase your chances of winning it back by throwing out a foot. Those EA boys have been hard at work; the new season can't come soon enough.



2-UP URBAN CRUISING AND BRUISING



GTA V

PC, PS3, Xbox 360 / out 17 September

The great thing about Rockstar's games is that once you've either completed or tired of the main mission, you can just mosey around, listening to the radio, looking for people to shoot and occasionally having an exciting crash where you flip your car (or horse, in the case of *Red Dead Redemption*) over a river and it explodes. With a gameworld that's bigger than both the last two GTA games and *RDR* put together, the new instalment will offer months of idle cruising.

VS

SAINTS ROW IV

PC, PS3, Xbox 360 / out 23 August

The *Saints Row* series is *GTA* with a group of e-number-popping teenage boys at the helm.

Like said teenagers it has no class, a tenuous grasp of reality and a brilliant sense of humour. *GTA* might be technically better in every way, but *SR4* has a Dubstep Gun. It fires dubstep music at people, causing them to explode and everyone around them to start freaking out. You also have superpowers, needed to defeat the aliens that have abducted the President. Obviously.



WHAT WE'RE PLAYING ON XBLA



BATTLEBLOCK THEATRE

1200 Microsoft Points

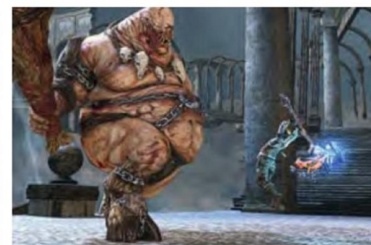
You've been marooned on a mysterious island run by homicidal cats who force their prisoners to compete in an arena of frequently fatal platform puzzles. Playing it alone is a giggle, but co-op multiplayer is an absolute hoot... Can you resist punching Player 2 into a spike pit?



FAR CRY 3: BLOOD DRAGON

1200 Microsoft Points

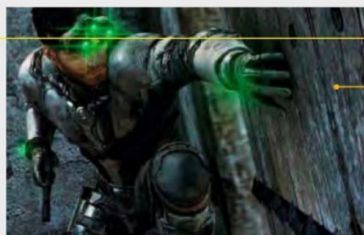
The '80s was all neon strips, one-liners and musclebound action heroes. *Blood Dragon* has all of those things, plus cyborg soldiers, laser-firing dragons, and the voice of *Terminator*'s Michael Biehn. Retro doesn't do this hilarious FPS justice – it's better than the '80s. All of it.



GOD MODE

800 Microsoft Points

If you're a fan of the *Serious Sam* games, in which you blaze your way through ludicrous numbers of enemies as they charge at you from all directions, then *God Mode* is for you. It can only be played co-op, which adds to the fun, except when your partner rage-quits in a stage.



INCOMING

JULY

● SIR, YOU ARE BEING HUNTED

AUGUST

● TOM CLANCY'S SPLINTER CELL: BLACKLIST

● LOST PLANET 3

SEPTEMBER

● RAYMAN LEGENDS

OCTOBER

● BATMAN: ARKHAM ORIGINS

WorldMags.net

YOUR TURN.

THE NEW JAGUAR F-TYPE.

It's the sports car only Jaguar can make. Supercharged engines and supercharged emotions. And from £58,520, now it's your turn.

JAGUAR.CO.UK



Take your turn. Download the Blippar app to get inside the F-TYPE.

HOW ALIVE ARE YOU?



Vehicle shown F-TYPE V8 S from £79,985 On The Road. F-TYPE range official fuel consumption figures (tested in accordance with EU legislation) in mpg (l/100km): Urban 17.8-22.4 (15.9-12.6); Extra Urban 34.0-40.9 (8.3-6.9); Combined 25.5-31.4 (11.1-9.0). CO₂ Emissions 259-209 g/km. For comparison purposes only. Real world figures may differ.

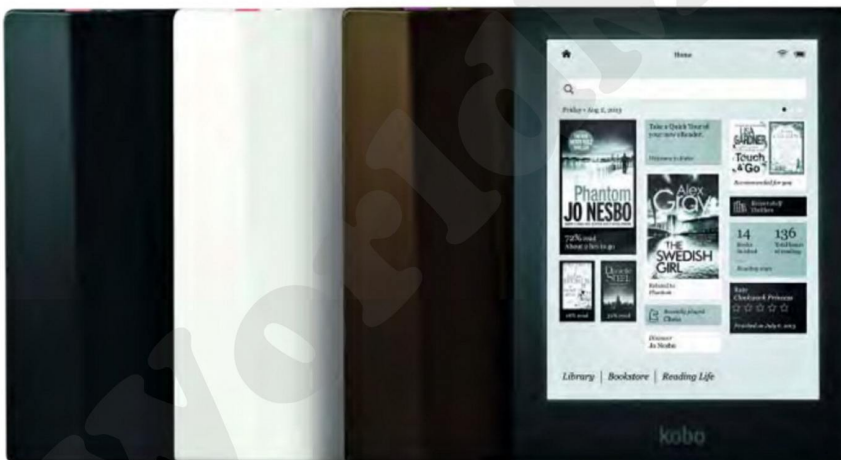
WorldMags.net



Fish out of Vaasa JOLLA

While Nokia has been making some rather nice Windows phones of late, it wasn't so long ago (well, 2011) that the Scandinavian phone manufacturer was pinning its hopes on a bold new OS called MeeGo. Sadly MeeGo sank under the weight of those hopes and was eventually abandoned by Nokia, but fellow Finnish company Jolla has brought it swimming powerfully back to the surface in its new guise of Sailfish OS. With a swish, tile-based UI, Android app compatibility and this smart-looking 4.5in, 4G launch phone, it stands a fighting chance this time.

€400 / jolla.com



Kobig or Kohome KOBO AURA HD

While paper books might seem about as close to the bleeding edge of technology as a pair of wooden shoes, they outperform e-readers in many respects. They're splashproof, dustproof and able to withstand impacts that would shatter a Kindle; they can't run out of battery; they don't have any security issues; and, for now, they have a higher-resolution display. That's because print resolution is 300 dots per inch, twice that of most e-readers. We say "most", because Kobo's new offering has a swanky, Retina-approaching 265ppi. But can you use it to prop open a window? Well yes, actually.

£140 / kobo.com



MY GADGET LIFE

RICH MOORE

Director of *The Simpsons*, *Futurama* and *Wreck-It Ralph*, and old-school games addict

I grew up with video games.

One of my earliest memories is of seeing *Pong* in a pizza place. It's been really cool to see games mature and change from the most primitive graphics to state-of-the-art games that look like live action movies. To make a film based on something that was such a big part of my growing up was fantastic.

We played a lot of classic games when we were writing *Wreck-It Ralph*.

Qbert and *Donkey Kong* were easily the most popular. *Tapper* didn't get so much play. I was amazed by how challenging they were, not forgiving like today's games. They were really in the business of separating you from your money. My first game back on *Donkey Kong* lasted about 12 seconds. But I also got that old feeling of 'I wanna do better next time'.

I accidentally ended up being Zangief.

We made the movie in a very rough form first, with storyboards and basic music

"OLD GAMES WERE IN THE BUSINESS OF SEPARATING YOU FROM YOUR MONEY"

and whoever was around doing voices. So I did the dialogue for Zangief, and John Lasseter [CEO of Pixar] said, "Keep that in." So I became an actor.

The Simpsons' success was a surprise.

But I do remember thinking, "This is exactly the kind of thing I've always wanted to work on." By season three, the show was pretty popular and we thought, "OK, well this will probably go on for about three years, and then people will get sick of it." But privately I did have a gut feeling that this was something special, particularly during those early years, when we were inventing it and figuring out the style.

Wreck-It Ralph debuts on Blu-ray and digital download on 3 June

EYE-TECH SUNNIES

Quit squinting about
and get yourself
some shades

1 Moonwalker by Quiksilver

These '80s-tastic glasses provide excellent UV protection on Earth, but we should say that they won't guard against the powerful solar radiation on the surface of the actual moon.

£85 / quiksilver.co.uk

2 Belmont by Schwood

Made from oak, these sunspecs are light and comfortable on the face, and in a pinch you can use them to build a tiny fire.

£150 / surfdome.com

3 Plimcana by Adidas

What is a plimcana? Is it like a gymkhana, but instead of horses jumping over the fences it's hipsters in plimsolls? Probably.

£100 / adidas.co.uk

4 Septante 3 by Theo Septante

For real glasses wearers, these smart frames contain Transitions' new 'Xtractive' lenses, which darken even through a car windscreen (others don't).

£(depends on prescription) / gb.transitions.com

5 Max Transitions by Nike

If you've got 20-20 eyes but still want clever light-adjusting specs, these respond to tiny variations in light intensity to optimise your eagle-like vision.

£195 / nike.com

6 Hideaways by Maui Jim

Light, strong and boasting super-thin scratch-resistant lenses, these titanium aviators are some of the nicest face furniture you can buy.

£220 / mauijim.com



[Picture RGB Digital]



Money makes the sound go round B&O BEOLAB 14

People often say to us: "I really want kick-ass home cinema audio, but the other half isn't having it, as they say it'll look ugly. What do I do?" Sometimes the solution is a soundbar; sometimes splitting up with your partner. If you happen to be rich, though, you're laughing. Not only is the BeoLab 14 made with B&O's elite approach to sonics, but it also looks mint. And for a change, the Danes haven't tied this 5.1-channel kit exclusively to their B&O universe, so you can use it with your own TV and AV gear. Though its handsome TVs would surely seal the deal.

£2500 / b&o.com



Cyclo™



Cyclo™505 HC

This easy to use, slim, lightweight and waterproof cycle GPS device comes with logical menus and lasts up to 12 hours without recharging!

- 3" flat anti-glare touchscreen
- Complete map bundle with road-based Tele Atlas mapping and OpenStreetMap for path and trail
- Upload your rides to your preferred training website
- Includes ANT+ sensor, wireless heart rate monitor, wheel/cadence sensor
- WIFI enabled for wireless connectivity to your PC and Bluetooth® ready

For detailed product and stockist information visit www.mio.com/cyclo or contact our UK distributor Paligap on 01454 313116 www.paligap.cc



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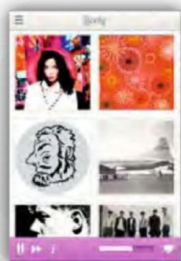


The best
EXPERIENCE
in bicycle
navigation

1



2



3



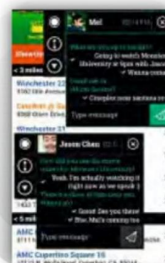
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5



7



8



9



1 Punch Quest

from £0.63 / Android, iOS

Available for a few months on iOS and now freshly arrived on Android, this funny, addictive punch-em-up takes care of the running and lets you concentrate on serving up a knuckle sandwich to anything that gets in your way.

4 Crabtron

£0.69 / iPad

As befits the lifestyle of an immense, space-faring crab, your only task is to smash the place up, tearing everything from laser-equipped sharks to ocean liners into shreds with your giant claws, then devouring them.

7 Ninja SMS

£0.97 / Android

Recommended if you're a megatexter: whatever app you're using, a new SMS will pop into the middle of your screen. Not recommended if you'd find that so annoying that you'd fling your phone into the pit of Mount Doom.

2 Lively

Efree / Android, iOS

A simple but crafty music discovery app that collects tunes that have been posted on blogs (mostly Tumblr, by the looks of it) and presents it as an endless, Last.fm-ish playlist. Because yesterday's music ain't cool, yo.

5 Pizza Compass

£0.69 / iOS

Because what the Western world needs most right now is an easier, quicker way of getting cheese into its face, Pizza Compass navigates you to the nearest open pizza joint at any time of day or night. Book your place at Fat Camp now.

8 Focustwist

£1.49 / iOS

Apparently, Steve Jobs was in talks to use Lytro's image-refocussing camera tech in iPhone cameras. So he'd have liked this app, which takes similar refocus-ready images to that created by a Lytro. For US\$398 less than a Lytro.

3 FL Studio Mobile

from £12.95 / Android, iOS

While it's a bit expensive for casual binkety-bonkers, this turns your tablet into a powerful 99-track sequencer, synth and drum machine. With 133 instruments, drum kits and beats, it features rival desktop software offerings.

6 Snoopify

Efree / Android, iOS

Take a picture of your friend/colleague/pet, choose from a variety of gangsta accessories and Snoop'em up. Good for about five minutes, it works best if you choose someone who doesn't really want to be Snoop'd.

9 FourFourTwo

£2.99/issue or £23.99/year / iPad

Full disclosure: *FourFourTwo*, the best football mag in the world, is published by the same people who bring you *Stuff*. Namely, us. Which means its iPad edition will be as brilliant as ours. (Nearly. We didn't show them all the tricks, obvys.)



APP SPOTLIGHT BBM

Efree / iOS, Android

Yes, we're aware you've heard of BlackBerry's powerful, compulsive messaging app before. It was once the main reason for a young person to get themselves a BB. But now that BlackBerrys are no longer flavour of the month, it's moving to iOS and Android with the intention of poaching some of the huge amount of ground taken by WhatsApp. We predict a riot.



HYBRID & DIESEL

THE REFINED, REDEFINED



CITROËN DS5 HYBRID4

Citroën DS5 is the pinnacle of the award-winning DS line, elegantly fusing innovation with cutting edge design.

For further information, please visit www.citroen.co.uk. Or to book a test drive, call 0800 023 4000.

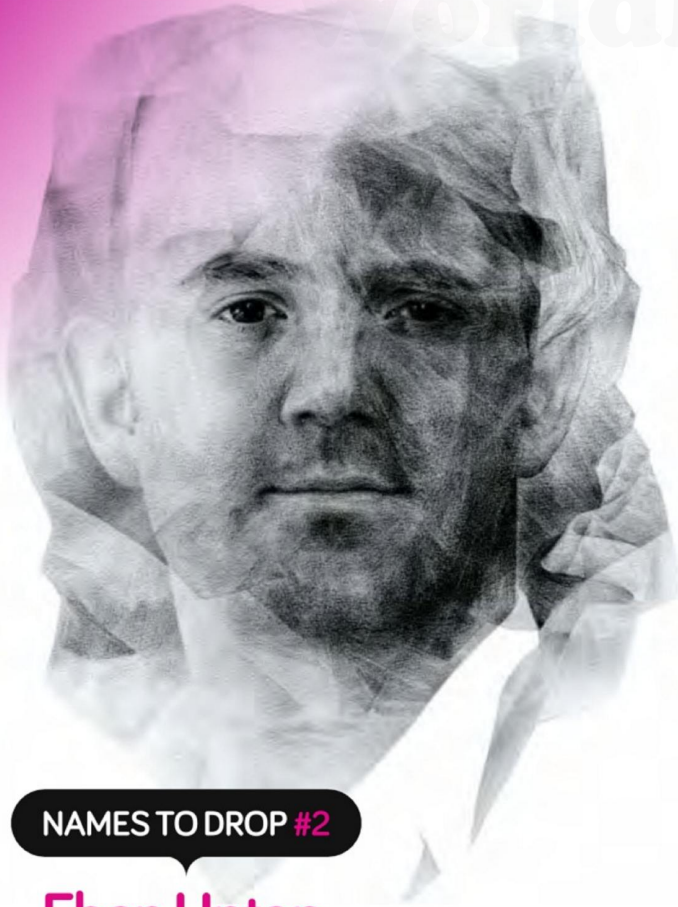
CITROËN prefers **TOTAL**

CRÉATIVE TECHNOLOGIE



Official Government Fuel Consumption Figures (Range): Urban Cycle, Extra Urban, Combined (litres per 100km/mpg) and CO₂ emissions (g/km). Highest: Citroën DS5 HDi 160 6-speed automatic DStyle/DSport 7.9/35.8, 5.1/55.4, 6.1/46.3, 158 CO₂. Lowest: Citroën DS5 Hybrid4 200 Airdream DStyle & DSport with optional 17" alloys/DSign 3.1/91.1, 3.6/78.5, 3.4/83.1, 88 CO₂.

Model shown: Citroën DS5 Hybrid4 200 Airdream EGS6 with pearlescent white paint and 19" black alloys.



NAMES TO DROP #2

Eben Upton LEADER OF THE DIY TECH REVOLUTION

The founder of the Raspberry Pi Foundation tells us how he put a pocket-money computer in the hands of the next generation of programmers, and gives us a tip on the future of gaming...

Learning computer programming was the best thing I ever did.

It was also an easy decision to make, because I had a BBC Micro in my bedroom. Raspberry Pi was born of a desire to give another generation of kids the same opportunity. Because although today's phones, tablets and games consoles are all very clever, they're not programmable.

It doesn't matter what you teach, as long as you teach something.

My first piece of code was probably >10 PRINT "I AM THE BEST" >20 GOTO 10. Most schoolkids in the '80s knew how to do that. I stayed on the BBC Micro for a few years and I learned a lot because it had a built-in

assembler. You could break out of BASIC into assembly language, then go back into BASIC. With that basis in assembly language, it was an easy transfer to the Amiga a few years later. By the time I started work experience for IBM at age 18, I hadn't written any code in a higher-level language for several years, but that wasn't an issue because the fundamental principles are basically the same.

Price was a the crucial factor in developing the Pi.

Our earliest desire was that it should cost about £20, so that parents or schools would buy them. It took us another four years to figure out what hardware we needed, and two more to get the first one built.

"WHEN PEOPLE DO SOMETHING WITH A PI, THEY POST A FULL SET OF INSTRUCTIONS AND SOURCE CODE FOR OTHER PEOPLE"

My favourite Pi project so far is Dave Ackerman's balloon project.

He hooks them up to cameras and sends them up to the edge of space underneath weather balloons. The nice thing about the Pi is that when people do something with it, they don't just post a self-congratulatory video, they post a full set of instructions and source code on Github, so that people can clone what they've done. That means any primary school in the country can use Dave's work to build their own space project.

Other people are the best source of Pi knowledge.

There is a steep learning curve – we're working on that – so the best way to learn is to join a club. Code Club (codeclub.org.uk) runs after-school clubs, Coder Dojo (coderdojo.com) also does events for adults, and the Raspberry Jam events (raspberrypi.org.uk) are part show-and-tell, part user group. For a fairly simple first project, try to get a Pi running as a media centre. It makes a very good IPTV set-top box.

A Pi can beat a Wii at graphics.

It's somewhere a little north of the Playstation 2 and the Wii in performance. We keep meaning to benchmark it against the Ouya – the processor won't be as fast, but the graphics core should hold up well. I think a lot of people want the casual gaming these sort of devices can offer. But I know from personal experience that cable set-top boxes have very high-end 3D graphics cards in them, and it's not entirely clear to me why your Sky box isn't already the home of casual gaming. If I had to plump for the next big contender in gaming, I'd say it was already underneath your TV, not being all it could be.

When it comes to my personal gadgets, I'm a bit of a Luddite.

My laptop is an old Thinkpad X14, which is basically bulletproof, and I've got an antique BlackBerry that I only use for calls and email. I've just got a Galaxy Note 10.1, because I'm wondering whether the stylus might work better for me than a conventional tablet. But I'm not really a gadgets guy, mainly because I don't have time.



TASTIEST SLICES OF PI



BrewPi

Brewing good real ale at home is difficult, but the BrewPi automates the tricky parts of the process. Well, once you've built, soldered and programmed it.



FishPi

Unlaunched as yet, this Unmanned Surface Vessel (robo-boat) will cross the Atlantic unaided and do a few scientific experiments to boot.



BeetBox

Using a Pi, a speaker, some wood and six beetroots, NYU student Scott Garner has created the first beetroot-based musical instrument.

[Illustration: Stuart Whitton]



POInts of reference GARMIN ADVANCED SERIES

The sat-navs are fed up with getting the blame. Every time you fail to understand their clear directions, they have to spend an afternoon in the glove box while you stand near a barbecue saying, "Yuh, sorry it took us ages to get here, chuffing sat-nav's fault, stupid thing doesn't have a clue." So, starting with Garmin's new Advanced range, they're going to hold your hand even more, giving directions such as "turn left after the library" or "turn right before the bakery". And then when you're late, you'll just have to find someone else to blame it on.

from £140 / garmin.com



KEFfin' refreshin' KEF M500

The last time we remember KEF working in metal was with its six-foot-high, solid aluminium Muon speakers, which cost £70,000. They were certainly nice, but at 115kg each it was actually pretty painful to strap them to your head. Happily, KEF paid attention to our muffled screams and created a new metal masterpiece in the M500s, which still promise real hi-fi sonics but weigh a much more mobile and less neck-crunching 208g.

£250 / kef.com



TOM WIGGINS MEDIA HOARD

Don't you wonder sometimes 'bout sound and vision?



● While **YouTube** might be home to the odd gem (the whole Pronunciation Manual channel, Adam Buxton's Sausages song and the cat on a Roomba in a shark suit chasing a duck), I'm not sure there's a lot there I'd be willing to pay good money for. That may be about to change with the launch of subscription channels, which start at £1.49 a month. The initial line-up is lacking in any big names and a chunk of them aren't available in the UK, but it indicates the direction YouTube is headed in – and it's one that could stick another nail in the coffin of traditional TV.



● Something I would be happy to pay for is **Space Bar** (Efree) – a new iOS app that lets you listen in on gigs as they happen. You can preview a show for five minutes, before stumping up a paltry 69p for the rest. Nothing is archived and you have to agree not to record or broadcast the stream yourself. It may seem a little light on superstars but the makers promise shows from Kanye West and John Legend are on the way, which should convince others to take part. If nothing else, it's one way of hearing live music without getting beer spilled on your shoes.

RUARK AUDIO R7

£2300 / ruarkaudio.com

Hang about. I seem to be holding a copy of the Habitat catalogue. Don't panic, gadget fan. Until 2017, when DFS will include the Autonomous Bum-Grinding MechaSofa in its autumn collection, we have nothing to fear from furniture. And furniture is precisely what Ruark has created with its lovely new R7: furniture that also happens to do a very good job of playing music.

Ha! It's a... a thing! A music thing! Yes, it is a sound system. It'll play pretty much anything from any source – it'll stream your music wirelessly over Bluetooth (aptX), use its built-in Wi-Fi to tap into the music collection living on your NAS, play CDs, stream internet radio, and it has inputs for a turntable or iDevice. And it should play well, thanks to a class A-B amplifier that feeds 30W each to a pair of 5in drivers with integrated tweeters. Oh, and a further 100W to an 8in subwoofer.

“HI-FI OFTEN TAKES UP SPACE;
THE RUARK MAKES SPACE”

Sounds like a gadget to me. And to us; close your eyes and its audio expertise is unmissable. Open them, and it's a hand-finished piece of walnut furniture (albeit one with a control panel that can be detached and used from across the room). High-end hi-fi often takes up a lot of space and looks as if it was designed by someone for whom a Land Rover Defender is the acme of subtle style. The Ruark not only looks incredibly swish, it actually contributes surface space. So, no need to visit Habitat after all.

Bully for you HP SLATEBOOK X2

We're a bit scared. In last month's Supertest we beat up the HP Envy X2 for trying to be too much like a laptop. Now its younger, fitter brother has come to settle the score. Android 4.2.2; 10in, 1080p screen; the latest 1.8GHz quad-core Nvidia Tegra 4 chipset — this guy is ripped. It's also packing a second battery, HDMI and USB3.0 in its bundled keyboard dock, yet is a mere 20mm thick and only 1.4kg. Run away! Wait, look at the price. We can simply buy our way out of this beating.

£380 / hp.co.uk



Brownlee on motion TOMTOM MULTISPORT

TomTom has already dipped its toe into the smartwatch water, teaming up with Nike on the rather nice Sportwatch GPS. The Multisport (and its leg-specific companion, the Runner) sees it diving in like an Olympic triathlete to stay ahead of the likes of Garmin and Suunto, plus impending competition from Apple (probably) and Samsung. Indeed, with a swim-stroke sensor, bike mount and 10-hour battery, it's something of a triathlete's dream... Or it will be if the price is right.

£tba (due August) / sports.tomtom.com

? WTF IS A MOOC...

It's OK, I know this one from Scorsese films. As in "Hey Larry, why'd ya eat all the freakin' meatballs, ya freakin' Mooc!" That's 'mook'. A MOOC is a Massively Online Open Course. Sort of like a Massively Multiplayer Online Game (MMO), except instead of meeting up with your fellow nerds and wizarding about in a poisonous troll-dungeon, you meet up with your fellow nerds and level yourselves up by absorbing knowledge, or 'learning'.

Alright already! Hows do I gets one?

American universities have led the charge, opening their digital doors to students from across the globe via companies such as edX, Udacity and Coursera. Via online courses that last from a few weeks to a few months, anyone with a web connection can

access free education from Ivy League schools. And from September, an august list of British institutions including The British Museum, British Library and the universities of Warwick, Exeter and Cardiff will be offering free online courses via Futurelearn, a new company owned by the Open University.

I'm a get me a degree!

Easy there, frat boy. For the moment, MOOCs only offer short courses and they won't give you a cap and gown at the end. Which is fair enough — for a proper qualification, you need more expensive resources like tutorials and professionally adjudicated exams. But with the rapid growth of telepresence tech and remote working, we wouldn't be surprised if MOOCs become the universities of the future.





TOYOTA

ALWAYS A
BETTER WAY

ALL NEW TOYOTA RAV4



5 year
TOYOTA
WARRANTY

KEEP THE SPIRIT ALIVE.

Get into the all new RAV4 and let out your inner child. The original SUV is now even more fun to drive as well as having more space, more comfort and more features. So now being a grown up, doesn't mean you have to stop acting like a child. The fun starts from just £22,595. To find out more visit toyota.co.uk



Scan to
discover more

Model shown is New RAV4 Invincible 2.2 AWD from £28,195. Offer excludes metallic paint extra £495. Prices correct at time of publication and include VAT, delivery charge, number plates, 1 year's road fund licence and £55 first registration fee. 5 year / 100,000 mile manufacturer's warranty is subject to terms and conditions. New RAV4 range Official Fuel Consumption Figures in mpg (l/100km): Urban 30.7 (9.4) - 49.6 (5.7), Extra Urban 46.3 (6.1) - 64.2 (4.4), Combined 39.2 (7.3) - 57.6 (4.9). CO2 Emissions from 176g/km - 127g/km The mpg figures quoted are sourced from official EU-regulated test results obtained through laboratory testing, are provided for comparability purposes and may not reflect your actual driving experience.

OUR MONTH

What the past 31 days have brought us by way of geekery



I APPLANNED A FESTIVAL

The Great Escape had 350 artists playing at 30 venues around Brighton over three days — numbers that would usually make an OCD gig fan like me reach for Excel. But now the festival has an app that automatically creates a timetable of your favourite bands. Perfect.



Tom Parsons
reviews editor /
tent inspector



I BECAME AN ENVIRO-CHONDRIAC

Thanks to the Netatmo Weather Station, I'm now obsessed with my flat's noise and CO₂ levels. Windows are now flung open during cooking and at work I look for noise spike levels at my flat. Ye gods, what am I doing?



Mark Wilson
features editor /
MET-head

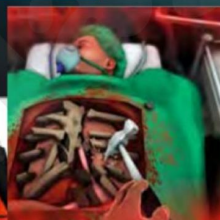


I DESIGNED MY OWN CLOTHING

Not as ill-advised as it sounds, because I used the 3D design tool on tailorforless.com. All you have to do is size yourself up — or get a tailor to do it, if you'd like it to be accurate — then decide if you can really pull off flamingo paisley with russet beige. I can. (I hope I can.)



Will Dunn
news editor /
flaneur

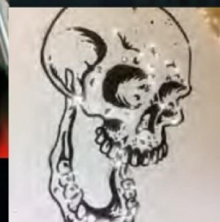


I RIPPED OFF A MAN'S LUNG

By accident — I was trying to perform a heart transplant on *Surgeon Simulator 2013* (£6.99, surgeonsimulator2013.com). It's a mash-up of *QWOP* and *Operation*, so your virtual patient relies on you mastering tricky key combos and mouse actions. Yes, they're doomed.



Tom Wiggins
deputy editor /
Florence
Nightingale



I TURNED A SKULL INTO A MUSICAL INSTRUMENT

Not a human skull, for that would just be a rattly bongo, but rather my doodle turned into an odd beepy song by Tunetrace (free, iOS). You can alter the tempo, but it won't sound better.



Ross Presly,
deputy art
editor /
head hunter



I HIT 45MPH ON A BIKE...

...on the flat. Am I a Chris Hoy-shaming superbiker? No. Was I holding on to a motorbike? Again, no. I was riding the Stealth Bomber, a 4.5kW electrically assisted mountain bike. Fast and fun, but check stuff.tv for the full review. Oh, and don't sell your car: it's £9000.



Luke Edwards,
multimedia
journalist /
hyper biker



the perfect pair

The latest smartphone from Sony
free with our new BRAVIA TVs*

With just one touch, transfer content from the palm
of your hand to the big screen and enjoy breathtaking
colour on the remarkable TRILUMINOS** display.

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*If you buy a Sony TV KDL-55W900 or KDL-46W900 you will get an Xperia™ Z Smartphone for free. *If you buy a Sony TV KDL-55W800 or KDL-47W800 you will get an Xperia™ L Smartphone for free. Promotion available from the 23rd May to the 14th July 2013 - See full T&Cs on www.sony.co.uk/BRAVIAbundle. **Only available on Sony TV W9 series. 'Sony', 'make.believe', 'BRAVIA', 'TRILUMINOS' and their logos are registered trademarks or trademarks of Sony Corporation. All other logos and trademarks are the property of their respective owners. Xperia is a trademark or registered trademark of Sony Mobile Communications AB

YOUR MONTH JUNE

Ignore the summer sunshine: here's how you should spend the next 30 days



04

PLAY REMEMBER ME

It's Neo-Paris. It's 2084. You are a specialist agent who steals folks' memories, but something has gone wrong. You can't remember anything. The irony! Time to go hunting for revenge, using only your wits, fighting skills and alluring buttocks.



07

WATCH AFTER EARTH

Will Smith and his son Jaden, who is probably about the luckiest child on the planet, crash land on Earth 1000 years after humans last lived there. Unfortunately, it's now a haven for all manner of nasty creatures. So, a bit like Southend on a Saturday night.



14

PLAY THE LAST OF US

In this third-person shooter, you play a man tasked with escorting a young girl across the United States after a parasitic fungus turns almost everyone into fungus-zombies. Which will probably happen any day now, to be honest.



20

TRY NOKIA'S ASHA 210

If you can't go five minutes without facetweeting but can't afford a BlackBerry Q10, the new Asha is cheap as chips (well, £50 worth of chips) and has a keyboard with a dedicated button for launching your favballsocial app.



21

PLAY DEADPOOL

Marvel's most controversial crusader gets his own game. The plot appears to involve jumping, killing and boob jokes. Kids: don't let Ma and Pa see the PEGI 18 rating. Parents: that '18' on the front indicates the 18 essential life skills little Tim will learn.



25

WATCH WORLD WAR Z

Zombies. They're all over the place. That is, all over the place *culturally*. Were they all over the place *actually*, you'd want to have seen this film, starring Brad Pitt. Or to have read Max Brooks' original, likely superior, book.

Panasonic



EVERYTHING YOU LOVE IN ONE PLACE



NEW SMART VIERA WITH PERSONALISED HOME SCREENS

Create personalised home screens for you and your family with our new Smart VIERA TV range. Save and access your favourite websites, apps and games as well as services such as BBC iPlayer, Netflix and YouTube in one convenient place. New Smart VIERA with personalised home screens, it's smart TV made easy.

See how easy it is to personalise your TV, at: panasonic.co.uk/smartviera



SMART VIERA

WorldMags.net

As the world's favourite crowdfunding site escalates from 3D-printed keyrings to multi-million-dollar vanity projects for wealthy Hollywood directors, we ask...

WILL CELEB PROJECTS KILL KICKSTARTER?

Almost every big movie or game is now part of a franchise. Why? Investment. If it's not a safe bet, it doesn't happen. *Akira*, *The Birds*, *Commando*, *RoboCop*, *Highlander*, *Scarface* and *Lethal Weapon* are all set for unnecessary remakes, while original ideas are ignored.

When Kickstarter arrived, it promised to upset this stale system and sell new ideas straight to the audience. It worked. But then Zach Braff, star of simpering faux-indie whinge-fest *Garden State*, showed up, gigantic, shameless cap in hand. Kickstarter got publicity, new money flew in... And investment-free funding changed. Now it's not just first-timers getting a shot at their dreams, it's rich people getting free money. Braff may have told the *LA Times* "I feel like we've all joined this little club", but his backers provide donation, not investment. Zach doesn't owe a dime from ticket sales to anyone else in his 'club'.

Yes, big names shine a light on crowdfunding. But I've already had a major tech manufacturer ask me if it should Kickstart its new product. From their point of view, it's a cheap way to test the market, but it's also a quick way to kill an exciting new phenomenon.

Kevin Smith, a proper indie filmmaker who paid for his first movies with credit card debt, agrees. Now that he has money, he told Reddit, he'd rather fund *Clerks 3* himself than "suck the loot out of crowd-funding". Kickstarter's not a charity, but it's not for millionaires, either.



YES
Will Dunn
news editor



NO
Luke Edwards
multimedia journalist

I'm one of those Kickstarter types who gets excited watching projects but rarely invests. But thanks to celebrity projects, fiscally freer folk are flocking to the site to get things done.

So why are celebs asking us to pay for their projects that'll line their already capacious pockets? *Fight Club* director David Fincher's personal labour of love – turning *The Goon* comic into a film – has raised US\$442k. He'll be throwing in way more to actually get it made, but that extra Kickstarter funding ensures that it gets beyond the conceptual stage.

Celebrity Kickstarter projects can even revive the dead. *Veronica Mars*, abandoned by studios, was jump-Kickstarted to life with US\$5.2m of fan pledges. But headline projects also attract new people to Kickstarter. 63 per cent of *Mars* pledgers were virgin backers, and they have since injected US\$400k into 2200 projects.

Plus, Kickstarter remains a meritocracy. Melissa Joan Hart (aka *Sabrina The Teenage Witch*) had a go, but only raised US\$52k of a US\$2m goal. Thank the Kickstarter Gods.

Celeb investment costs little and gives direct benefits. Dresden Dolls bandleader Amanda Palmer made an album that was available for just US\$1 – which a record label would not have allowed. Celebrities already get paid by us, so what's the harm in giving the money directly, for something we want, rather than paying more to line executives' pockets along the way?

WHAT YOU SAID

Benjamin Stocker
Crowd-sourcing is based on the open idea of the internet. Denying it to certain people because they're famous goes against this principle.

@spudleybean
Any good idea deserves a kickstart, whether you're a celebrity or not.

James Rogerson
If it's a project that wouldn't otherwise be made, I don't see a problem with it. The studios presumably have no interest in backing Zach Braff's film, or he'd have gone down that route.

Julian Nowland
The whole idea of Kickstarter is to supply people with the money they need to make great things. If the person already has the money then the whole point of using Kickstarter is nonsensical.

@billwalknoise
Being a celebrity does not necessarily mean you are rich. And celebs aren't taking anything away from anyone else by using Kickstarter, so why not?

Daniel Price
It speaks volumes that Kickstarter has said that it's good for the site when big-timers use it.

Shaun Brown
Zach Braff didn't want to be tied down by movie execs. Isn't this what Kickstarter is about – an alternative to otherwise restrictive practices?

Join the debate at www.stuff.tv

VOTEGRAPH

Your feedback from fb.com/joinstuff, in mountain form

YES 46.0%

It's the start of the Kick-end

HMM 6.5%

Start vetting projects?

NO 47.5%

It's still a meritocracy



WIN A MARSHALL FRIDGE & LIMITED EDITION PIN-UP AMP

Your walls and shelves are bedecked with charity shop LPs to which you've never listened. In the corner, an Argos-sourced acoustic guitar, from which you've removed two strings as an excuse for not playing. Why? Because besides average *Guitar Hero* skills, you don't play.

It's time to level up this rocker image, and Marshall has the set-up to kick you off. Firstly, a Class 5 amp and cabinet from its Custom Shop, with vintage styling details such as brown fleck levant, vintage leather handle and gold piping. Rather

awesomely, it's also bedecked with one of three '40s-era burlesque designs. Choose from Jane, Greta or Betty... but do so carefully: this £800 valve amp will last you a lifetime. Even when turned up to '11'.

But you can't rock around the clock. Sometimes you have to kick back and cool your raw fingers on a cold can of Vimto – which will be ably served by the 82cm tall, 124-litre, £400 Marshall Fridge. Designed for your studio (lounge), it has various shelves for drinks or snacks, and a freezer box for chilling your picks.

HOW TO ENTER

We've got a Marshall Custom Amp and Fridge for the lucky winner. One runner-up will also win a Fridge. Visit www.stuff.tv/win and answer this:

IN 2012 MARSHALL CELEBRATED...

- A** ... passing its Grade 1 guitar exam
- B** ... its 50th anniversary
- C** ... a heptathlon silver medal

For more information, visit marshallamps.com

Terms & conditions

1 Open to UK residents aged 18 or over. **2** Entries close: 11:59pm on 10 July 2013. **3** Winner's choice of Marshall Custom Pin-Up Amp design – 'Jane', 'Greta' or 'Betty' – subject to availability. **4** Prizes are as stated. **5** Prizes are non-transferable. **6** Only one entry per person. **7** For full Haymarket terms and conditions see: www.stuff.tv/legal. Promoter: Haymarket Media Group, Teddington, Middlesex, TW11 9BE.

HURRY!
COMPETITION
CLOSES
JULY 10TH

WIN MORE!



A 16GB APPLE iPad 2 WITH EVIL DEAD

What's better than spending a wet Saturday night curled up on the sofa with a loved one, watching a creepy film? We'll tell you – getting your partner to lock you in the under-stairs cupboard with headphones and an iPad, on to which is loaded not a 'creepy' film, but a rip-snorting, pant-wettingly scary film. Like, for example, the 2013 reboot of *Evil Dead*. Made by the producers of the original, it's surely one of the must-see horror films of the year. We've got an iPad 2 to give away, so when it comes out on iTunes, you'll be good and ready.

Closes: July 10th



A GIGASET SL1910A TOUCHSCREEN HOME PHONE

The DECT ain't dead, and we've got four touchscreen Gigaset's here that agree with that view so vehemently that they're willing to be given away to prove it. A choice of three home screens and photo frame capability make full use of that 3.2in screen, with ECO DECT tech, photo caller ID and Bluetooth capabilities upping the geek ante. Gigaset's SL1210A is £140, and available from John Lewis, Amazon, Dixons and Ligo. But, do try and win one first, eh?

Closes: July 10th

to enter go to
www.stuff.tv/win

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SMART TV | WITH S RECOMMENDATION

The only Smart TVs with all the catch-up services.



Internet access required. To receive recommendations, a Freeview, Freesat, Virgin Media or Sky TV input and the collection and use of personal data (viewing history) are required. Apps shown are available now or coming soon on all 2013 Samsung Smart TVs (F5300-F8500). Apps may not operate on previous Samsung Smart TVs. Recommended minimum broadband speed for Apps shown is 2MB/s. Samsung LED TVs received more awards than any other LED TVs during 2012.



COOL LIST 2013

Cool is such a tricky thing to define that we're not even going to try. Instead, we're going to show you. Over the next 15 pages you'll find 11 gadgets, apps, cars, digital services and technologies which encapsulate what it means to be cool in 2013. So the next time someone asks you for a definition, you can just show them this

[Pictures Pete Gardner Words Tom Wiggins, Simon Osborne-Walker, Stephen Graves]

#1
Buzz Aldrin's
speakers (possibly)

PHILIPS FIDELIO PS1

There's something about Space Age design us geeks find irresistible. So for the Philips PS1s, grabbing a spot on the Cool List was like shooting interstellar fish. Its tweeters are suspended on chrome stalks 1.1m up – ear-level when you're sitting down – and its ground-dwelling 6.5in woofers are encased in inert, sculpted wood. It'll kick out 2x100W of audio, has AirPlay for hooking up iThings and aptX Bluetooth for superior wireless audio from Androids, plus there's an HDMI for connecting your TV. And, like 2012 Cool List alumni the SoundSpheres, they look like aliens. Gets us every time.

£2000 / philips.co.uk





#2 Tablet DJing goes pro

TRAKTOR DJ

As anyone who follows @DJsComplaining on Twitter will know, a disc jockey's life involves getting paid vast sums for moaning about public transport. Nice work if you can get it. The good news is that Traktor DJ is powerful enough to turn almost any iPad owner into a floor-filling superstar. It analyses your iTunes library and recommends songs to mix based on BPM, with auto-sync making the transition smoother than a buttered beaver. You'll also find tricks to loop, cue and remix on the fly; try Freeze mode, which chops the track up into chunks that can be triggered with a tap. Nobody will guess it's not your own work, but if anyone does get suspicious, just slag off an airport or two.

£13.99 / native-instruments.com



#3 The bane of broadcasters

NETFLIX

With broadcast TV providers feeding us repeats of *When Bakers Attack* and *Estate Agents Say the Funniest Things*, it's video streaming site Netflix that now has us crowded around the office kettle, asking who's seen the finale of *House of Cards*. After countless sofa surfers developed a debilitating addiction to *Breaking Bad* (largely though illegal downloading), Netflix nabbed exclusive UK rights to series four. Since then it's created Kevin Spacey vehicle *House of Cards*, *Twin Peaks*-esque suburban werewolf tale *Hemlock Grove*, and just proved how in tune with its audience it is by resurrecting cult comedy *Arrested Development*. Your TV is no longer the place to find must-see TV. Netflix is.

£6/month / netflix.com



I MADE THIS

Ted Sarandos
Chief Content
Officer, Netflix

When did you come up with the idea to make original content?

Way back when we were distributing DVD, but we couldn't do it until we had a subscriber base of this size.

Will we see several seasons of new *Arrested Development*?

Hopefully! The logistics were a nightmare. All the stars had full-time jobs during production – Tony Hale on *Veep*, Michael Cera was starring in a movie in Chile, Jason Bateman was directing a film... We were constantly bringing people in and out.

What's new in new *AD*?

Every episode is crafted around one character. Mitch Hurwitz [producer/writer] has made it ridiculously fun and complicated. Every episode intertwines with the others, so a throwaway line is the punchline to something three episodes ago. It was crafted for Netflix viewers who could watch a bunch in a row.

Rumours abound that Ron Howard is circling Stephen King's *The Dark Tower* – any chance Netflix could pick it up?

I spoke to Ron about it, actually. The last time we talked about it the thing was being kicked about HBO – but it's no longer there. Once we get through with *AD* we'll talk again.

What about 4K for Netflix?

It's early, but it'll be fascinating to see how it progresses. The pricing is obviously in the very early curve. If it evolves as a streaming-only format it'll definitely be very interesting.



#4 The friendlier UAV

LEHMANN LA100

Some facts: 1) unmanned aerial vehicles are extremely cool and 2) pootling around high in the sky, dropping surprise death on those down below, is quite a lot less so. So let's have a big hand, please, for Lehmann's LA100. This civilian video drone is designed to fill a wholly peaceful role: that of flying smoothly in a fixed radius loop, with nothing more deadly than a GoPro action cam as its payload. You can use that to take overhead snaps or video of the ground below and it's completely autonomous, so even somebody with the flying skills of an overweight ostrich can use it to drop directorial bombs. But not real ones, thanks very much.

€990 / lehmannaviation.com



Simple Control Over Your Entertainment



Access a growing world of entertainment on your LG Smart TV with the intuitive Magic Remote.*

Using point, scroll, gesture or voice commands, LG's unique Magic Remote enables simple TV navigation.

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www.lg.com/uk/smartTV



Smart. Inspired by you

LG Smart TV
CINEMA 3D

*Magic Remote not included with all LG Smart TV's but can be purchased separately.

**Services are subject to availability and may vary across products, platforms and regions. LG Electronics UK works closely with content providers to ensure services are live and up to date across its range of Smart TV devices. Due to platform upgrades some services require modification before launching on 2013 devices.

Normally something with a 'Beats by Dre' logo attached (a Premier League player, for example) wouldn't get within a hundred miles of the Cool List. But like the One X before it, HTC's newest flagship phone is impossible to ignore. Where Samsung's S4 is light and somewhat plasticky, the HTC is solid and metallic, with a screen so crisp it could've been made by Walkers. It also has a beautiful new iteration of the Sense interface plus a 4 'UltraPixel' camera – fewer, but bigger and smarter pixels in order to trap more light. The HTC One is a perfect storm of design, innovation and build quality – and so we'll even put up with a Beats logo. **£530 / htc.com**



#5

The high art Android

HTC ONE

MORE>

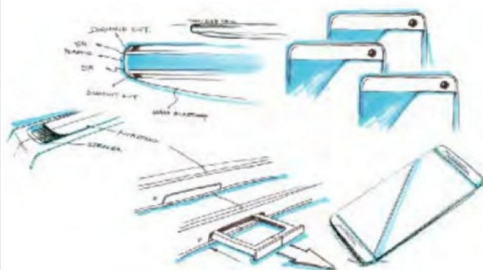


HOW TO... MAKE AN HTC ONE

Apparently there's more to it than gluing a hi-def LCD to a slab of aluminium. Three significant problems had to be solved first – and here's how HTC tackled them

PROBLEM #1

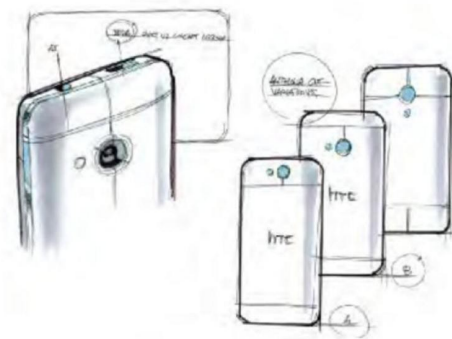
Android phones don't feel premium. Even Samsung's outstanding Galaxy phones and tablets are tainted by a plastic shell.

**DIAMOND-CUT THE METAL**

To keep the One looking trim and show off the slick finish on its aluminium unibody HTC has bevelled the edges of the phone. "It helps to reduce the perceived thickness of the sidewall," explains Zellweger. "First the whole unibody gets machined off. Next up, we treat it with a kind of blasting, to achieve a matt finish. Then we come in with a fine bit, and diamond-cut off the chamfers – so you get a secondary finish on the same part."

HTC'S SOLUTION

Make a phone with more metal than the floor of a Terminator T-1000's hair salon. But still make it light and tactile. Like so...

**USE INJECTION MOULDING**

The One's aluminium body doubles as the phone's antenna. "We had to find a way to break the metal in some sections to allow for the antenna technology to work," explains Zellweger, "yet we also wanted to reduce the number of part breaks." The solution? zero-gap injection moulding. "We're basically melting together the plastic with the metal into one solid unibody, and then machining the entire thing so that we don't feel any gaps around the part breaks."

**MICRO-DRILL THE CASE**

The One's front-facing BoomSound stereo speakers are among its most recognisable design touches. But loud as they are, the design team kept their presentation refined with a pair of micro-drilled speaker grilles in the aluminium casing above and below the screen. "That's done with a series of machined holes that are very precise," says Zellweger. "They don't leave any sort of radii on the sides, and they end up looking like a texture rather than a surface change."

**STRETCH THE SCREEN**

The design team wanted to make the HTC One's display into an 'endless screen experience'. While it's not edge-to-edge, a bit of technical jiggery-pokery did enable the screen covering to have the appearance of 'bleeding' over the edges while remaining strong. Says Zellweger: "That was a struggle, because we were asked to put a lot of reinforcement around the screen – in the end we were able to remove all these elements and just have the screen flow over the edge of the device."

STUFF SAYS

HTC's desire to bring Android up to iPhone levels of build quality has worked, albeit at the expense of removable battery or storage. We think the compromise paid off

**I MADE THIS**

Claude Zellweger

One & Co Principal and
HTC Creative Director

"It was really important for us to achieve something that feels like it was almost made by hand, even though it's a mass-produced product. The way we deal with the antenna was inspired by the clean, grid-like structures you find in architecture. We start off with a single piece of aluminium and inject polycarbonate into some channels to create the antenna. The two cuts on the back are necessary to make the antennas work, but they also lent a sort of structural, exoskeletal feel to the finished product."

MORE>

PROBLEM #2

People weren't using the HTC Sense widgets.

HTC'S SOLUTION

Invent BlinkFeed, a homescreen that delivers news and notifications.



I MADE THIS

Drew Bamford
Assistant Vice President of User Experience
"Smartphones now bring in so much information and data that it overwhelms the user. We tried to come up with the simplest possible design so that it didn't contribute to that visual clutter. In the past, you dipped into the Twitter app, then the Facebook app, then the Instagram app. We redesigned our homescreen interface around this habit of snacking on content. In the future your phone will learn about you, about your friends, and your behaviour, so that it can become more proactive and always bring you the information that's most relevant to you."

STUFF SAYS

BlinkFeed is a stylish way of intermingling social media and actual news. But we'd prefer it if HTC didn't limit the selection of news outlets to its own partners

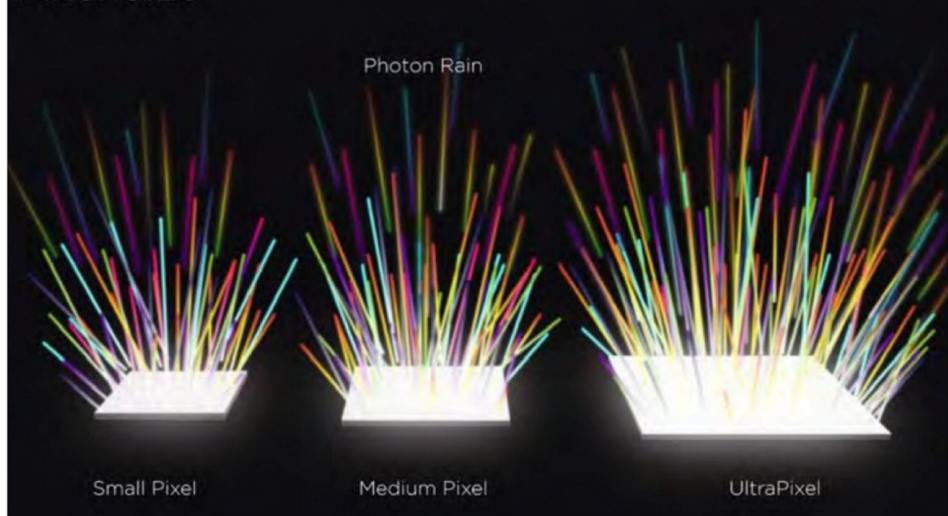
PROBLEM #3

Smartphone cameras have tiny sensors, and are rubbish in low light.

HTC'S SOLUTION

Make a sensor with fewer, but bigger, pixels. Call them 'UltraPixels'.

Pixel Size



I MADE THIS

Symon Whitehorn
Head of Special Projects

"When I was working at Kodak, they were releasing point-and-shoot cameras that were worse than the year before – just because retailers such as Dixons wanted to be able to put higher and higher megapixel counts on the sales stickers. What the industry's known for a long time is that smaller pixels make low light photography harder."

The HTC One's solution? UltraPixels. "They're the largest, most light-sensitive pixels available on a smartphone today," says Whitehorn. "Comparable, in fact, to those on compact photo enthusiast cameras." The One's UltraPixel camera has fewer, larger pixels that capture more light – and also deliver smaller image files.

"By going lightweight on our files, we can process them on the fly," explains Whitehorn. "The distinction between video and stills is starting to disappear."

"Why tax the user with the decision of what format to shoot in? Couldn't we just shoot both simultaneously?" And so HTC Zoe, which takes 20 images and three seconds of video with a single button press, was born.

The camera's placement proved more troublesome. "A lot of effort was spent placing the imaging components on the central spine, so that we could maximise that depth for the optics module over the sensor while keeping a sleek, sexy profile. It was a risk on our part, but it worked."

STUFF SAYS

The UltraPixel gamble has partly paid off: the One's camera is superb in low light, and Zoe means you won't miss action shots – but stills don't stand up to being blown-up or zoomed in to as well as those from rivals such as the Galaxy S4



SHIFT_

NISSAN
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NISMO

nismo



PERFORMANCE UNLEASHED

INTRODUCING NISSAN NISMO

Nissan Motorsports engineered cars, fusing performance with technology. Sporting an immense heritage in innovation and design. Fully equipped with the digital soul of the gaming world. It's the power of Nismo. Now unleashed in Juke. Visit www.nissan.co.uk/juke-nismo

Nissan. Innovation that excites.



Scan for more. Fuel consumption figures for Juke range: URBAN 28.8-48.7mpg (9.8-5.8L/100km), EXTRA URBAN 47.1-67.3mpg (6.0-4.2L/100km), COMBINED 38.2-58.9mpg (7.4-4.8L/100km), CO₂ emissions 169-124g/km. Information correct at time of going to print. Nissan

Motor (GB) Ltd, The Rivers Office Park, Denham Way, Rickmansworth, Hertfordshire WD3 9YS.

301582/1



#6 Six seconds of genius

VINE

The secret to social network success is joining at just the right time: too soon and you've got no-one to socially network with; too late and you'll be laughed out of internetsville for being a luddite. Vine's time is now. Its six-second, GIF-like videos are perfect for sharing and the touch-to-record interface opens up a load of opportunities for nifty stop-motion style clips. Want evidence of its now-ness? Daft Punk used it to announce the tracklisting of *Random Access Memories*, while the Tribeca film festival ran a competition to find the best Vine-made movie (see panel). It's clear this is a bandwagon you need to jump on before it's too late.

Efree (iOS) / vine.co



4 STEPS TO MAKING AN AWARD-WINNING VINE VIDEO

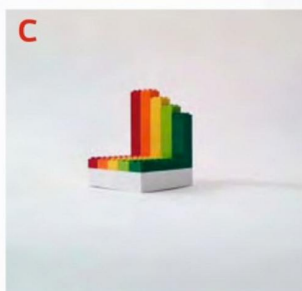
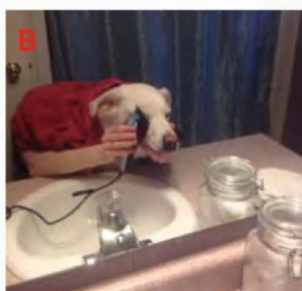
By @MattSwinsky director of *Close Shave* / *LiveinSick.com*

1 *Close Shave* took us about 15 minutes to set up and 45 minutes to shoot. We typically don't storyboard any of the Vines we shoot. Instead we decide on a visual effect we would like to achieve and then figure out the rest of the stuff – dialogue, sound effects or camera techniques – during the shoot.

2 I have an Olloclip, which has been the staple of almost every single Vine we do, and I just recently bought a telephoto lens. I do have an assortment of lighting equipment, but haven't dug too deep into lighting Vines yet. As Vine grows I find myself investing more time and money into iPhone accessories.

3 When you mess up it's all the way back to the beginning, but the first time we shot this one we found only a couple things we wanted to add or take out. I'd say the hardest part is deciding when to start filming and when to stop. So much can go wrong when you have only a second or two to get a shot.

4 There are so many simple things you can do to make your Vine stand out. Use household objects to see what they can do to bend your image. We've messed around with stereoscopic techniques, prisms to warp the image and, of course, fake blood. The best tip I can give, though, is to have fun.



STUFF'S TOP 5 VINE VIDEOS

A *Close Shave*

This creepy Tribeca competition winner is proof that Vine isn't just for filming clips of your mate Harry 'The Throat' downing a pint in three seconds. bit.ly/13sXPn6

B *Home Alone*

The real star of this homage to the aftershave scene in *Home Alone* is Vine user MarLo Meekins' dog. A movie hound in the making. bit.ly/15Tw7XP

C *Lego*

Mark Weaver's colourful Lego building video is one of the best examples of Vine's stop-motion skills. A real labour of love. bit.ly/10K9hKx

D *I think it's obvious what you are Harry...*

One of Vine's most successful videos yet, Jackson Holland gets his Harry Potter on for a broom-based trip around his house. bit.ly/12gXS6f

E *Vinecation Loop*

A clever mishmash of the real world and photography, this Vine makes the most of the looping nature of the videos. bit.ly/14xco3M



RAIN DOES *not stop* PLAY

WHATEVER YOU'RE DOING THIS SUMMER
DO IT WITH *zest*



Carling Zest with a hint of *natural citrus*
Also available with a hint of ginger.
Show us your Zest at facebook.com/carling

for the facts drinkaware.co.uk

WorldMags.net

#7 This is the future of TV

4K

As soon as Discovery Summerhouse channel got an HD suffix in the EPG, high definition got old. So, we're terrifically excited about levelling-up to 4K. Here are seven reasons why:

1 It's four times better than HD

We're all agreed that HD is better than standard def, right? 4K — also known as Ultra HD — is an equally profound improvement in quality. The 3840x2160 pixels that make up a 4K video image will make your 1080p TV look like watching a CCTV monitor.

2 It's the future of gaming

High-end PCs already support 4K gaming, while Sony has already suggested 4K for the PS4 — albeit added after release, much like 3D was on the PS3. An accompanying video-on-demand store is also a shoo-in.

3 It's almost affordable

In the US, Seiki is charging just US\$1300 for a 50in 4K TV. Brand snob? Sony's KD-55X9000A 55-incher (pictured) is, rather appropriately, £4000. Not exactly pocket change, but TV prices only ever go one way. Dooooown.

4 It'll be in your next phone

Qualcomm's Snapdragon 800 chip, due this winter, shoots 4000x2560 video. Don't expect a pocket-sized 4K screen just yet, but streaming 4K footage to your TV is well within the realms of possibility.

5 It's here, there and multiplying

Lots of home cinema gear is ready for 4K: amps that pass it through, Blu-ray players that upscale it and Sony's 4K-streaming biscuit tin, the FMP-X1. And there's lots of ways to shoot it: JVC's GY-HMQ10 camcorder and Canon's 1D C SLR, for a start. Panasonic's even made a 20in, 4K tablet that runs Windows 8.

6 It's justifying massive TVs

If you've always wanted a TV that could double as a garage door, LG's 84LM9600 is for you. Although an 84in monster, with 4K it's still crisp at any distance, and thanks to its sheer size, there's room for 10 speakers (including two subs) — so it sounds as big as it looks.

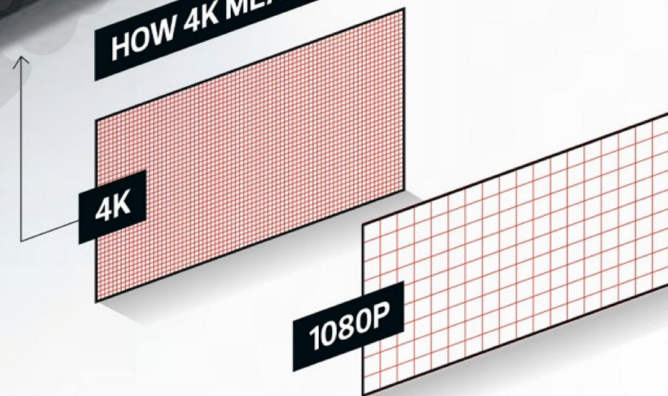
7 No idiot glasses

Most importantly, 4K is an exciting new TV tech that doesn't involve wearing dopey plastic glasses.





HOW 4K MEASURES UP



NEED TO KNOW SONY'S 4K SECRETS

■ You can swap your 40in TV for a 65in one

All those extra pixels mean that you can comfortably sit closer to the screen, as Scot Barbour, Vice President of Production Technology at Sony Pictures, explains. "Basically, to be able to even see 4K resolution, there's a given distance sweet spot from the screen, one and a half screen heights away. So you're going to want to have a bigger screen and be closer to it to actually be able to perceive 4K for what it's really about." What's that? Not just a new TV, but a bigger one? OK...

■ Old films will look better than they did in the cinema

After scanning *Lawrence of Arabia* at 8K resolution for its 4K restoration, Grover Crisp's team at Sony Pictures discovered that white streaks in several scenes were actually cracks caused by heat damage to the film... "visible on every print anyone has ever seen." Not any more.

■ There's nowt to watch. Yet

The only native 4K content currently available comes on Sony's 4K streamer – and that's a US-only release.

Sony's plugging the gap with '4K Mastered' Blu-rays – scanned at 4K, downsampled to 2K, then upscaled back to 4K. Having seen *The Amazing Spider-Man's* 4K Mastered Blu-ray side by side with a native 4K version, it's impressive, but not the real deal.

■ ...but 4K Blu-rays are coming...

"The Blu-ray disc itself could be a great foundation. Because it's been able to support internet connectivity, it's been able to support 3D; 4K is a great evolution of that," says Jeremy

Glassman, Manager for Emerging Platform Development and Marketing at Sony Pictures Home Entertainment.

■ ...and it'll be here sooner than you think

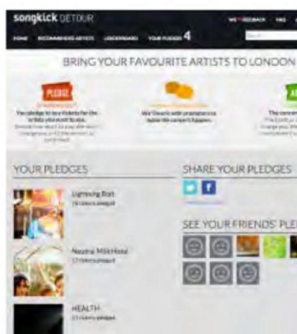
"There are three pieces of the puzzle," says Keith Vidger, Business Development Manager for Digital Cinema Production at Sony. "Display technology, content and transmission. The last is out of our control, but looks like taking care of itself in short order; way quicker than the 20 years that it took HD to arrive."



#8 Gigs get crowd-sourced

SONGKICK DETOUR

Being a music snob is a double-edged sword. On the one hand, you only like super-cool bands none of your friends have heard of. On the other, these bands have very few fans, so they never tour near you. Until Songkick Detour came along. This venture, currently London-based but set to go nationwide, lets you pick a band, decide how much you'd pay to see them and if enough like-minded fans do the same, Songkick will try to bring them to your town. It's brought Desaparecidos to the UK for the first time ever already, so your favourite jazz-post-rockers could be next. detour-ldn.songkick.com



STUFF'S DETOUR'D GIG WISHLIST



● **Demetri Martin**
Detour's not only about music. *Parks and Recreation* star Aziz Ansari is already playing London. We'd like to see the king of one-liners join him.



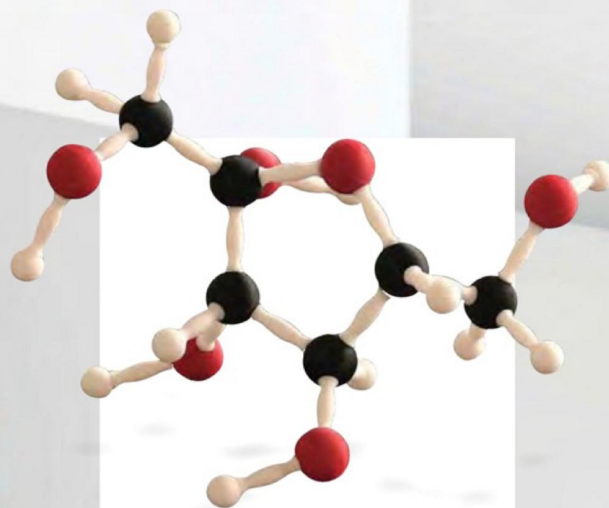
● **Television**
The post-punk legends are playing one of ATP's last ever weekends in November. Surely there's time for a warm-up gig?



● **How to Destroy Angels**
Trent Reznor plus wife Mariqueen Maandig, old pal Atticus Ross and NIN's Rob Sheridan? Yes, please.



● **Earl Sweatshirt**
Odd Future's rising star needs to leave the rest of his crew at home and show the UK why some are calling him the new Nas.



#9

3D printing hits the High St

IMAKR STORE

3D printing is awesome and we've been excited about it for years. But what we're even more excited about right now is a project that makes 3D printing a little, well... easier. That something is the iMakr Store. This 2500-square-foot shrine to all things 3D printed is just down the road from East London's Silicon Roundabout and offers classes, workshops and the chance to get your own CAD files printed. You can also buy pricey 3D printers from Makerbot, CubeX *et al*, or even make a statue of yourself using a 3D scanner. If you can persuade John Terry to stop using it, that is. imakr.com

Samsung GALAXY S4



Samsung GALAXY S4
Life companion

Upgrade now at
phones[®]
4u

WorldMags.net



Glad's House

Relieving poverty among street children in Mombasa

Glad's House is a British charity working on the ground in Mombasa, Kenya, to improve the lives of the city's street children. It aims to lift many of the estimated 35,000 street children out of a life of hopeless poverty and give them the chance of a real childhood.

Living in intolerable conditions, separated or orphaned from their parents, they spend their lives in a daily struggle to eat and find shelter, often falling into petty crime or prostitution. Sadly many are addicted to glue, which alleviates their hunger and is cheaper than food. They have no home, no school, no family. But there is hope...

Established in 2006, *Glad's House* aims to provide a place of

safety for many of these children, giving them the opportunity to enjoy their childhood while preparing them for a productive and self-sufficient adulthood.

Glad's House employs social workers to undertake street work, building relationships of trust with those coming to the charity's refuge. This year, *Glad's House Refuge* will open its doors, providing shelter and a 'safe haven' for up to 75 children at a time.

It also believes sport is a great way to improve lives. Partnering with MOYO (Mombasa Olympic Youth Organisation) the charity provides sports kit and funding for boxing, football, basketball, volleyball and rugby teams. This helps provide the motivation to stay

away from drugs and crime whilst enjoying a very real break from their day-to-day existence.

We are always looking for partners and sponsors help with our ongoing initiatives. One of our main objectives is finding support for an incredible opportunity to enter a Kenyan team into the 2014 Street Child World Cup, which takes place in Rio de Janeiro two weeks prior to the FIFA World Cup. Entering the Kenyan team will help the charity raise awareness of the problems faced by street children. If you can help or would just like to find out more about the charity and other ways you can make a huge difference to these children's lives please visit www.GladsHouse.com. Thank you.



Practicality rarely comes into the equation when working out what is cool. For example, if Bill Murray wants to wear two hats to play golf, Bill Murray will wear two hats to play golf. And Bill Murray is the coolest man in the world. See? So while spending £2600 on a compact camera with a fixed lens isn't exactly sensible, it's the audacity of the retro-tinged RX1 that makes it cool. And, yes, with a 24MP full-frame sensor, it takes incredible pictures, but for that kind of money you could easily afford a versatile Canon EOS 5D Mk III. The Sony RX1 is the two hats of the camera world – which means Bill Murray almost certainly has his eye on one.

£2600 / sony.co.uk



#10 World's most powerful compact

SONY DSC-RX1

#11 Rebirth of the British sports car

JAGUAR F-TYPE



It says a lot about Jaguar's status in the canon of cool that even introducing the F-Type to the UK in its spiritual home of Coventry didn't damage its rep. That's because this convertible-only successor to the legendary E-Type — alphabetically, at least — is powered by either a V6 or a supercharged V8, maxing out at a top speed of 186mph and a 0–60 time of 4.2 seconds. But, tasty as those figures are, it's the Jaguar badge on the front that makes this car so special. It's racing at Brooklands; film stars and footballers; Kim Novak's Jag MK VIII in Hitchcock's classic *Vertigo*. It's a new, Great British sports car from an iconic British brand. And even a trip to Coventry can't cripple that.
from £58,520 / jaguar.com

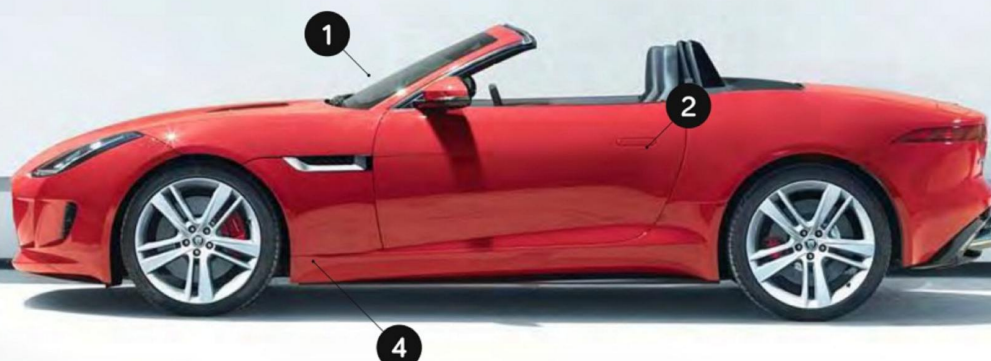
**IT'S A MASTER OF UNDERSTATEMENT****Simon Osborne-Walker**

Unlike some of my fellow Stuffers, I hadn't been hooked by the F-Type's styling. Too tasteful, not aggressive enough for me. But it only took one symphonic roar from the F-Type's engine to regress me to teenage wide-eyedness, as if I'd

spied a Countach for the first time. And on the road, when the deployable rear wing servos into view as you hit 60, it really shows its colour. The drive is rapid and taut, but it's also surprisingly comfortable on rougher surfaces and over speed bumps, even in its sportier Dynamic Mode. The base V6's handling is almost miraculously sure-footed whether its tackling hairpins or heavy braking, while

responsiveness takes a leap up in the perfectly balanced V6 S. And the top-of-the-range V8 S? Urgent, relentless fun. It's not as hot on the corners as its less punch-packing brothers – its weightier front-end puts paid to that – but its 5.0l, 650Nm engine never stops pulling. Which one should you lust after? My head says V6 S... my permanent grin says V8.

@Simon_OW**MORE>**



I MADE THIS



IAN CALLUM
DIRECTOR
OF DESIGN
JAGUAR CARS

A lot of people ask me if we had an E-Type in the studio while we were designing the F-Type, and the answer is no. We didn't need one. It's so entrenched in our memories. The thing about the E-Type is that it's about a power train and two people, and it's about pulling a skin tightly and elegantly around those components. Those things haven't changed. Sports cars allow you to better express the form of a car — as far as I'm concerned, the taller it gets, the less expressive it is. The sports car is the art of the car industry.

One or two details have been taken from the E-Type, such as the shape of the rear lights. We did consider the oval front grille from the D-Type and E-Type. It's a very beautiful shape, but we decided to make it more forceful, so we evolved what we'd been doing with the XF and the XJ, which was inspired by the original XJ.

The E-Type's main contribution is the beauty of line, purity of surface and great proportions. We set out the proportions for the F-Type by knowing the engine, knowing the capacity we need for two people

and some luggage, and wrapping it up as tightly as possible. We eliminated the overhang at the front, at least visually; made sure the cabin is sat in the right place relative to the wheels; made sure the overhang at the back is as exciting as we can make it. In other words, we made it as short as possible. And we work millimetre by millimetre at this stage before we design any lines, surfaces or details until we get those fundamental proportions that make the car visually exciting.



3



There are two laws you can't change: the law of physics and the law of Brussels. There are so many elements we have to consider, so many safety regulations we have to adhere to. Pedestrian protection determined much of the final bonnet shape, for instance.

We still work with pencil and paper.

There are two lines on this car that are very important. One starts off from an aerodynamic blade on the front splitter, sweeps up through the headlight, on through the front wing and door and then disappears. When a line on the car vanishes into the sheet metal like that, I like to describe that as the pencil coming off the paper. Part of the beauty of any line is that it has to contain the spontaneity of the original sketch. Of course, we go through any number of iterations on computers, but we always still start with an intuitive, sketched line.

1 There's a choice of two sound systems from British hi-fi stalwart Meridian, with either ten or 12 speakers pumping out 380W or 770W respectively. Perfect for blaring out Rule Britannia when you pass a 911.

2 To keep the bodywork sleek, the door handles fit flush until you either unlock the car or press a touch-sensitive area on the handle. The handles retract again when you start moving.

3 Pushing the magic button for Dynamic Mode sharpens everything up. You get better throttle response, more precise steering and quicker gear changes. It's all tweakable via an 8in touchscreen which also controls the stereo and sat-nav.

4 For beating boy racers off the lights, try the Dynamic Launch mode. Plant your foot on the brake pedal, build engine speed and wait for the signal to release the brake. Vin Diesels will be left sniffing your fumes.

Proximo™

YOUR IPHONE® IS IRREPLACEABLE.
NOW MAKE IT UNFORGETTABLE.

With Proximo™ you'll never waste time looking for your iPhone® or keys again.



KEEP

Alerts you when you are too far away from your iPhone®.



TRACK

Guides you back to where Proximo™ knows you last had your keys.



GET BACK

Activate an alert on your iPhone® to help you find it.



iPhone® & key finder: £49.99
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THE SCIENCE OF SMART STYLE

EVERY DAY MEN WRESTLE BEARDS, TACKLE TEETH AND TUSSLE HAIR – LUCKILY TECH IS LENDING A HAND

Every morning is a fight to achieve the perfect style as men unleash their grooming arsenal from the bathroom cabinet. But without the most advanced gadgetry it's a campaign that even the most determined struggle to enjoy – let alone win. So now it's time to make space for some new gear. Scientists have spent years researching and now have carefully engineered each product to make the daily preen more pleasant – no matter how simple the basic function.

VOLUME TECH

Nioxin At-Home hair products from RRP £16.99

- ▶ Thinning hair affects 50 per cent of people and causes stress
- ▶ There are many factors that affect the health of our hair: poor diet, the environment and so on. A healthy, balanced diet is essential for healthy-looking hair. Bodies need protein for growth and repair
- ▶ Eva Graham founded Nioxin in 1987 after her hair thinned during pregnancy, which inspired her to look for an answer to this common problem



SMOOTH OPERATOR

Gillette Fusion ProGlide SilverTouch Power RRP £14.00

- ▶ The beard has between 6000 and 25,000 hairs that men will spend 32.5 days in their lifetime removing
- ▶ Blade manufacturing uses more welds than most car manufacturers
- ▶ The ProGlide SilverTouch blades are thinner than a surgeon's scalpel reducing pull on facial hair, a main cause of skin discomfort
- ▶ ProGlide blades are finer than a sheet of paper with the tip's radius smaller than a brain cell. The blade edges are so small that optical microscopes aren't able to see them



THROW OUT THE MANUAL

Oral-B TriZone 5000 RRP £199.99

- ▶ There are at least four types of tooth brushing styles: **the twister**, darts all around twisting in no particular order missing areas; **the glider**, uses a rotating power brush and has to brush for two minutes in four quadrants; **the whirler**, circular motion across all areas so attention to detail required; **the sweeper**, sweeps all over without getting the depth of clean needed
- ▶ Currently 75 per cent of people in the UK are brushing incorrectly with the brush they use
- ▶ The Oral-B TriZone 5000 negates the need to 'brush correctly' – whatever your brushing style you can remove up to 100 per cent more plaque compared with a manual toothbrush



PERFECT PARTNER

Pro-Expert toothpaste took over 15 years, 500 scientists and over 100 studies involving 10,000 patients to develop and perfect its specialist performance

WASHING POWER

Head & Shoulders classic clean 2in1 shampoo RRP £2.79

- ▶ Every hour the human body loses up to 30,000 skin cells. Many gather to form flakes – this is dandruff
- ▶ Over half the world population suffers from dandruff in their lifetime
- ▶ 55 per cent of Brits say that they feel less desirable with an itchy scalp
- ▶ 43 per cent of people feel less professional at work when they have an itchy scalp



BRAINS IN THE BRAUN

Braun Series 3-380 RRP £139.99

- ▶ Male hairs grow on average 0.4 millimetre every 24 hours and dry beard hair is as tough as copper wire of the same thickness
- ▶ Two-thirds of men claim to have sensitive skin while half of men spend time styling their facial hair
- ▶ Dragon fly wings inspired the holes in the foil for optimum pressure distribution to capture more hairs
- ▶ Within 18 months, a Series 3-380 shaver will cut an average of six million hairs. It can be used in the shower and with foams or gels for greater comfort



"DRAGON FLY WINGS INSPIRED THE HOLES IN THE FOIL OF THE BRAUN SERIES 3"

TESTED BIKE SAT-NAV

WALES, BIKES & SATELLITES

Eschewing paper maps in favour of handlebar-mounted electronica, and despite inclement Welsh weather and wilderness, Team *Stuff* go touring



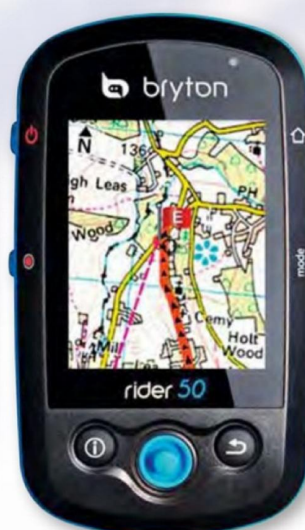
BIKE HUB + IPHONE 5



GARMIN EDGE 810



BRYTON RIDER 50



Why we tested

To find the perfect cycle touring sat-nav. There are dozens of ride-tracking apps on the market, but we were after the cycle equivalent of a TomTom: plug in a destination, arrive without a glitch and, as a bonus, get post-ride route analysis for ego fuel. After some preliminary testing we selected these three solutions and traipsed to Swansea to give them a mix of country and city riding to tackle (as well as some low-signal issues). Dropped off in the Brecon Beacons, we had to rely entirely on our chosen bike-navs to guide us to our final destination over 40 miles away on the Gower. And any following resulted in severe Haribo sanctions.

The route

We left from...

The winding and windy A4069, halfway up The Black Mountain at the western end of the beautiful Brecon Beacons.

We stopped at...

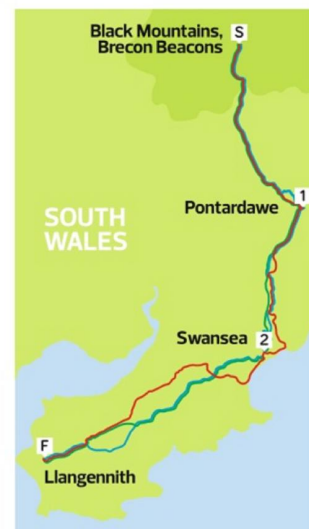
The Butcher's Arms in Pontardawe for a fizzy pop and a Mars Bar.

Then again at...

One Shoe Café on the outskirts of Swansea for a cream tea.

Until we finally reached...

The King's Head Inn, Llangennith (£99 per double room, B&B, kingsheadgower.co.uk), right by the coast on the Gower Peninsula. Good rooms, great food and lovely local beer – just the place for post-ride ribaldry and the resting of rubbery pins.



[Pictures Alex P]

CONVERT ORDINARY TO EXTRAORDINARY



DAC-V1 Digital to Analogue Converter

Using our unique digital signal processing technology the DAC-V1 can transform your computer into a high-resolution music hub. It can also unleash the sound of digital sources like your TV, games console, and hard disk player/server too. Listen directly through headphones or add our matching NAP 100 power amplifier and speakers to create a compact, high-end hi-fi system.

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BIKE HUB APP + iPHONE 5



"The cycle path ended abruptly and my iPhone battery died"

■ **Rider** Tom Parsons **Checkpoints:** Pub 12:10 Cafe 16:25 Inn 20:10
 ■ **Steed** Pinnacle Dolomite 4 (£750 / evanscycles.com)

I was intrigued by iBike's iPhone bicycle mount, but its companion apps only do tracking, not directions. So I decided to pair it up with the free Bike Hub app, available for Android and iPhone, and lauded by cyclists up and down the UK. Net result: my bike securely sat-navved up for just £45. Win.

Using an iPhone 5 made inputting the address of the Butcher's Arms a doddle, and of the four route choices offered by Bike Hub, I hit 'fastest'. Obviously. The auto-lock of the iPhone kept blacking out the screen, so I turned that off – no way that could end up biting me in the bum, eh?

Gravity-assisted gains

My less-than-race-fit physique helped me on the first downhill leg, and I took a bit of a lead, my less-than-race-stiff Pinnacle soaking up the A4069's bumps nicely. Hearing Bike Hub's instructions was pretty impossible at speed, but the map on the big screen proved relatively easy to follow and I was first to arrive at the Butcher's Arms.

Like the proverbial hare, I felt confident that I could spin an easier gear on the next leg, so I chose Bike Hub's 'balanced' route – a middle-ground of speed and serenity

– and found myself on a sun-dappled cycle path following the River Tawe towards Swansea. I didn't care if this was a slower route than the one Will and Ross were taking, I was enjoying mine far more.

And then disaster struck. The cycle path ended abruptly and my iPhone battery died. Thankfully I was carrying a spare iPhone 4, but I hadn't remembered to download the Bike Hub app to it – and doing so over the slower network of rural Wales took ages. By the time I reached One Shoe Café the other guys had already been and gone. Hare loses again.

Tea for one

A hasty, yet heartening, cup of tea gave way to yet more calamity. About three-quarters of an hour out from the One Shoe, the iPhone 4 – rattling infuriatingly in the iPhone 5-adjusted iBike mount – also died on me. Still miles away from the final stop, in gathering darkness and without a map, I had to swallow my geek pride and ask for directions.

Verbally routed, then, but the risks of cycling with no lights finally forced me to walk the last mile to The King's Head. My early lead was a distant memory, but at least the battery deaths also seemed to have deleted the tracking data...



Tech specs

Price iBike Phone Booth 5 mount: £45; Bike Hub app: £free
Display 4in
Battery life 2hrs. (approx)
Size 134x66x24mm
Weight 177g (inc. iPhone 5)
Maps UK, Republic of Ireland
Contact apple.com/uk



STUFF SAYS ★★☆☆☆

Easier to use than a dedicated sat-nav, but the drain on your phone battery makes it impractical



GARMIN EDGE 810



"The Garmin set me a surprise time trial along a dual carriageway"



■ **Rider Will Dunn** Checkpoints: Pub 13:05 Cafe 15:30 Inn 19:20
 ■ **Steed Cube Agree GTC** (£1250 / cube.eu)

The Edge 810 isn't just a sat-nav. It's a powerful bike computer that can be set up for a garageful of different bikes and linked to heart rate, cadence and power sensors, furnishing you with a professional level of cyclo-data that you can share on Facebook or Twitter. As the fierce Brecon wind chastened my shamefully be-Lycra'd behind, I didn't feel all that professional, but happily the Garmin only takes moment to attach and its screen, though small, works well even with thick gloves on. Within moments I had my route and was giving chase along a beatiful stretch of fast mountain road.

It's bleeping brilliant

The Garmin doesn't show you a huge map, but a huge map is just a dangerous distraction when you're whipping through the Welsh countryside on a full-carbon road bike. Instead, you must learn a two-bleep vocabulary: one bleep means there's a direction change coming up, at which point you check the small but highly readable map. A few hundred metres later, a different bleepity-beep tells you it's this junction; another quick map-check and you can't go wrong. There are no voice instructions or unnecessary complications, and the

backlight can be set to only come on for these moments, extending the battery life. Even with the backlight off, though, the screen is legible in daylight.

Road to hell

The Garmin's one foible was its fondness for big roads. I finished the second stage long before Ross and Tom – partly because I'm much better at cycling than they are, but mainly because the Garmin set me a terrifying surprise time trial along a dual carriageway into Swansea. That obviously upped my pace, but after several minutes trying to keep up with 50mph traffic I bailed on to a less lethal road. The Garmin was unfazed: it gave a quick bleep, recalculated the route and had fresh directions ready in less than 30 seconds.

Despite the pant-ruining fear of the A4067, I consider this more of a safety lesson than a major fault. On any cycle trip, you're best off planning your route in advance, and with the 810 you can do this using Google Maps or Garmin Basecamp, then upload it to the unit. The 810 is easy to use, limits distractions and finished the day with enough battery for another full day's worth of riding (which is more than can be said for me). Plan your routes, and it's the perfect bike-nav.



Tech specs

Price £480
 (Performance & Navigation Bundle)
Display 2.6in
Battery life 17hrs
Size 93x51x 25mm
Weight 98g
Maps UK, Republic of Ireland, Europe
Contact garmin.com/en-gb

STUFF SAYS ★★★★★

A capable navigator and a superb cycle computer – as good as bike-nav gets at the moment



BRYTON RIDER 50



"You can race a ghost version of yourself, like Mario Kart but in the real world"



■ **Rider** Ross Presley Checkpoints: Pub 13:30 Cafe 16:00 Inn 18:40
 ■ **Steed** Verenti Insight 105 (£1080 / wiggles.co.uk)

It's fair to say that I didn't get off to the best start with the Rider 50. First impressions weren't too bad – it clicked easily and securely into its dock, itself secured by thick rubber bands around the stem of my (lovely) Verenti's bars. And it was just as quick to get a GPS fix and show my position. But after that, things went a little downhill. Almost literally. Setting my destination was a little fiddly – the small joystick was easy to use with gloves on but the buttons on the side were harder to locate and press. Worse, the first route it suggested was a straight, off-road kamikaze down the valley side. Hardly road bike territory. The other two shot off as I restarted the Bryton, which didn't help my mood any. Especially given that it was a distinctly chilly 1°C at the top of the Brecon Beacons, I was also being buffeted by 20mph winds and to top it all off I'd just seen Tom force his way into a pair of bib shorts. Nice to get out of the office, eh?

Ghost in the machine

Eventually I got going and was able to enjoy the ride the Bryton gave me. The 2.2in screen is transreflective, making it a doddle to read in bright sunlight (it's also backlit for use in the dark), and there are

three main screens you can switch between while you're riding: the map, a data screen and one for training. That last screen gives you the option to race against a ghost version of yourself, like Mario Kart but in the real world. Of course, I didn't need that – I had a couple of real humans to catch.

Postcode? Pass

The Bryton didn't actually help with that a great deal. Keeping an eye on it while also trying to dodge cars was decidedly tricky, as was its *laissez-faire* attitude to one-way streets. It also took me over the steepest hills in Swansea when I reckon it would have been easier to ride around the bottom. But the biggest inconvenience was that it wouldn't recognise postcodes or building names, which is how all of our checkpoints had been provided. To get to The King's Head I had to navigate to the closest intersection, rather than the pub itself.

However, with the route locked-in, I was able to really get the hammer down, and the bold speed and distance screen on the Bryton egged me on to the extent that I was somehow the first to our final destination. If there's a rematch, I'll definitely upload the route first.



Tech specs

Price £200
Display 2.2in
Battery life 15hrs
Size 96x55x22mm
Weight 106g
Maps Full UK and Republic of Ireland, basic Europe
Contact brytonsport.com

STUFF SAYS ★★★★★

Not sophisticated enough for city couriers, but great with your own preloaded routes

"THE GARMIN'S THE MOST EXPENSIVE OUT THERE, BUT IT'S COMFORTABLY THE BEST"



THE WINNER

Thanks to...

Wiggle, for lending us all superb dnb clothing.
wiggle.co.uk/dhb
ABUS for protecting our bonces with its Tec-Tical Pro helmets.
zyro.co.uk
Mercedes Benz for lending us a nippy Vito Sport X van.
vitosport.co.uk
Renault for providing a Traffic support van.
renault.co.uk
 Most of all, **Visit Wales** for providing excellent advice and accommodation.
visitwales.co.uk



To watch the behind-the-scenes video, download the Stuff iOS app



GARMIN EDGE 810

After miles of hills, sweat and fear, we each came to know our cycling sat-nav solutions intimately – and realised they all have foibles.

Using your smartphone with an app such as Bike Hub is brilliant around town, but forcing the screen on and asking your phone to deliver constant GPS updates while doing other smartphoney things destroys your battery, making it an unworkable solution for long journeys.

The Bryton's a far better option for the serious bike trekker, and great value for a dedicated cycle sat-nav. It has some quirks in terms of route planning and usability, though – the one it tried on Ross would have been tough for a mountain bike, let alone a skinny-tired racer.

Meanwhile, the Edge's primary fault is its price: it's by far the most expensive solution here. But it's also comfortably the best, and certainly the one we'd want in charge of our rides, with great usability and clear guidance that never gets in the way of ride enjoyment.

If we were Garmin, we'd build an Edge with voice control. It would make entering destinations much easier than it is with clumsy, gloved fingers. And while we were at it, we'd add intelligent, on-the-fly ride recommendations from other bikers. Because let's face it, being able to hop on your bike wherever you find yourself and immediately know where to point your front wheel would be a killer feature.



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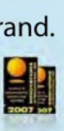
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TESTED HIGH-END COMPACTS

LITTLE BIG SHOTS

Forget megapixels. For ultimate quality it's all about the size of your sensor – and this trim trio are giants

Aye eye

The hybrid eye viewfinder means you can see either a digital view through the EVF or an optical one with a digital info overlay.

Nikon Coolpix A

Sizing up

If you're looking for maximum power from the smallest package, the teensy Coolpix A could fill your aperture. Despite packing the same size sensor as most of Nikon's DSLRs, this is the only truly pocketable compact of the trio tested. Some of the svelteness is due to the retracting wideangle lens and the lack of a viewfinder. It's also not quite so toolled up in the controls department as its rivals. The built-in lens cap is welcome, though.

Big time?

The Coolpix A is a camera you really want to love. With seemingly little effort it manages to look and feel premium, yet it's subtle enough for discreet street photography. Image quality is really very good, but this cutie's hampered by slow autofocus that has to hunt for subjects far too regularly. The 28mm-equivalent lens is also too wideangle to be versatile – you won't be taking many portraits with it, that's for sure – and the f/2.8 max aperture is a little slow for low-light shooters.

Tech 16.2MP • 28mm equiv. f/2.8 • 3in LCD, 921k dots • 111x64x40mm • 299g

Price £1000 / europe-nikon.com

STUFF SAYS ★★★★★

Capable of great results, but suffers from slow focus and a lack of versatility



See view

Nikon's designed the DF-CP1 optical viewfinder to clip into the A's hot shoe. Expect it to cost over £300 when it's released, though.



Close-up
Switching to the handy close-up macro mode is via an extra control ring on the lens. It allows focus down to just 14cm away.



Fujifilm FinePix X100S

Sizing up

You might think you know all about this Leica-alike, but the pumped S version promises a real performance step-up from the original X100. In particular, the improved focusing speed and updated APS-C sensor are what Fujifilm hopes will keep competitors at bay. That said, it hasn't fixed what wasn't broke, keeping the 35mm-equivalent f/2 lens, array of manual controls and hybrid viewfinder that impressed us so much on the X100. It also retains the retro looks and solid-but-lightweight magnesium build.

Big time?

The work that's been put into improving autofocus speed is undeniable, with the X100S snapping into focus quicker and more accurately than its rivals. Picture quality is exceptional, and almost equal to the Sony, even when shooting RAW. But it's also just a joy to use, with great controls, a nice feel in the hand and an eye viewfinder that gives you plenty of options for how you want to shoot. Our only niggle is that the faux-vintage styling seems overdone now. We'd like a subtle black version.

Tech 16.3MP • 35mm equiv. f/2 • 2.8in LCD, 460k dot • 127x74x54mm • 445g

Price £1000 / fujifilm.eu/uk

STUFF SAYS ★★★★★

Fast, feature-packed and fun – the FinePix X100S is the finest compact around

Sony DSC-RX1

Sizing up

The RX1 is the real big boy of this group, not just in overall size but because of the mahoosiveness of its 24MP sensor, which is full-frame – the size of a standard 35mm film frame. You can't get a smaller full-frame camera than this, but the necessarily oversized lens means it's still no pocket cam. Along with the pro spec and pro price, you get pro build, with a metal body that could probably stop a bullet. As with the Fujifilm, the RX1's 35mm Carl Zeiss lens has manual aperture and focus rings.

Big time?

For outright image quality, the RX1 can't be touched. The RAW files are stunning throughout the entire ISO range. Autofocus lags a little behind the Fujifilm, but it's still acceptable. The biggest downside is the price – and that's before you add the optional OLED viewfinder at £380, or £500 for the Carl Zeiss optical finder. And there's no flash, either. It's a huge investment, but you'll be rewarded with the best picture quality you can get from a compact camera.

Tech 24.3MP • 35mm f/2 • 3in LCD, 1228k dot • 113x65x70mm • 482g

Price £2600 / sony.co.uk

STUFF SAYS ★★★★★☆

An awesome camera, but hampered by an eye-watering price that's hard to justify

Dell recommends Windows.



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Dell.co.uk/XPS12

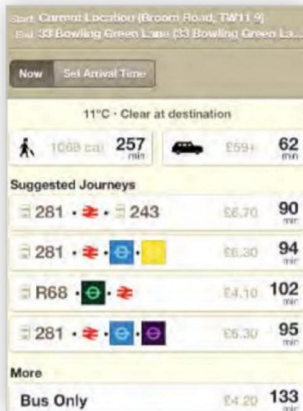
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App:roved

Stuff-certified apps for...



...London loafers

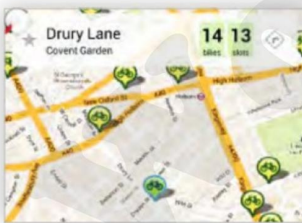
City Mapper

Whether you're a lifelong Londoner or a weekend visitor, City Mapper is your personal travel concierge. Using live info from Transport for London, it'll suggest several routes mixing walking, bike, bus, train, tube, Docklands Light Railway (and even 'catapult') options, plus journey times, a heads-up on ticket prices, or estimates for cabs.

It's fast, simple, and useful, with rain-free routes, the option to share via text, email, and social media and even an offline tube map. Definitely a home screen app.

£free / iOS
Stuff says ★★★★★

Also consider...



Cycle Hire Widget

London's 'Boris' bikes are a great way to get some lovely city air into your lungs, but you'll need this app to locate docking stations with bikes left, or spaces to redock once you've had your fill of fumes. There's also a free version of this accurate app, if you're Just Visiting.

£2.99 / Android
Stuff says ★★★★★



...double-talkers

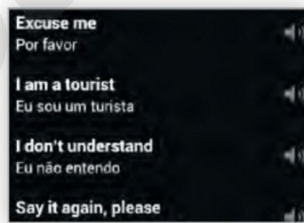
Duo Lingo

Turning language-learning into a game that resembles a pub quiz machine is a great idea. Duo Lingo taps into our innate competitive streak and works almost by osmosis, immersing the player in a world of French, Spanish, German, Portuguese, Italian or English.

Start with the basics or jump up to your current level, creating phrases from multi-choice word banks, or spelling and translating spoken snippets. Use it every day and you really will learn a new language, all in bitesize chunks ideal for filling life's little pauses.

£free / iOS
Stuff says ★★★★★

Also consider...



Tourist Language Learn & Speak

Here's a more direct approach for serious country-hoppers. It uses a phrasebook format for its written and spoken translations, categorised by situation (airport, dates, numbers etc), so you can let your phone do the talking.

£free / Android
Stuff says ★★★★★



...classy boozers

Cocktail Flow

It's Saturday night, all back to yours, the beer has run out and you're clinking through a bunch of half-supped Christmas spirits in that little cupboard in the kitchen. Let's see... tequila, Cointreau, pineapple juice... Let's just tap that into Cocktail Flow... Apparently that's a Poker Face. Cool!

The app can work with your existing booze batch, let you peruse by type or pull out a random drink with the Surprise Me feature. You also get tips on when to shake, when to stir and when to stick a bit of fruit on top.

£free / iOS, Android
Stuff says ★★★★★

Also consider...



Mixology

We love Mixology's fruit machine-style cocktail randomiser, and with nearly 8000 recipes there's plenty to get your liver into. There's also a more in-depth guide to the jargon and dark arts of the cocktail bartender, albeit wrapped in a less exotic skin than Cocktail Flow.

from £free / iOS
Stuff says ★★★★★



...grand designers

Homestyler

Take a picture of a room (ideally a fairly empty one), and Homestyler analyses the corners and angles to turn it into a 3D space, into which you can drop furniture, fixtures and fittings. Spin the sofa round to see if it'll fit into that corner, put a shower opposite and shove the fridge into the alcove beside the coal-effect fireplace.

Even if you're just trying out new colour schemes or choosing a rug, Homestyler is well worth a go, and home design addicts will love the browsable stream of interior designs from other users.

£free / iPad
Stuff says ★★★★★

Also consider...



Houzz

It lacks the DIY design features of Homestyler but Houzz is still a great source of inspiration. Many items on its carousel of interior photos have little tags dangling from them, linking to price and stockist info. Faves can be added to your Ideabook or shared.

£free / Android
Stuff says ★★★★★

SMARTPHONES

THE HOLY TRINITY

The best phones in the world run Android. The best Androids are this Samsung, Sony and HTC. Sophie Charara finds out which is best of the best... of the best



[Words Sophie Charara Pictures Matthew Beedle]



A smartphone is the most important weapon in your gadget arsenal. That means choosing the right smartphone is pretty damned difficult – and this is especially true today. You see, not long ago we would have automatically recommended the iPhone; it was the best option on many levels, so the only decision to make was how much built-in storage to plump for. But now that Android

rules the roost, with its widgets, smart multi-tasking and ever-improving app roster, there are dozens of great gadgets to consider. At the very top of 2013's Android tree are the HTC One and Sony Xperia Z, recently joined by the Samsung Galaxy S4, sequel to the most successful Android ever. We already know that they're each superb handsets; what we want to determine is which is superb-est of all. So let's crack on...

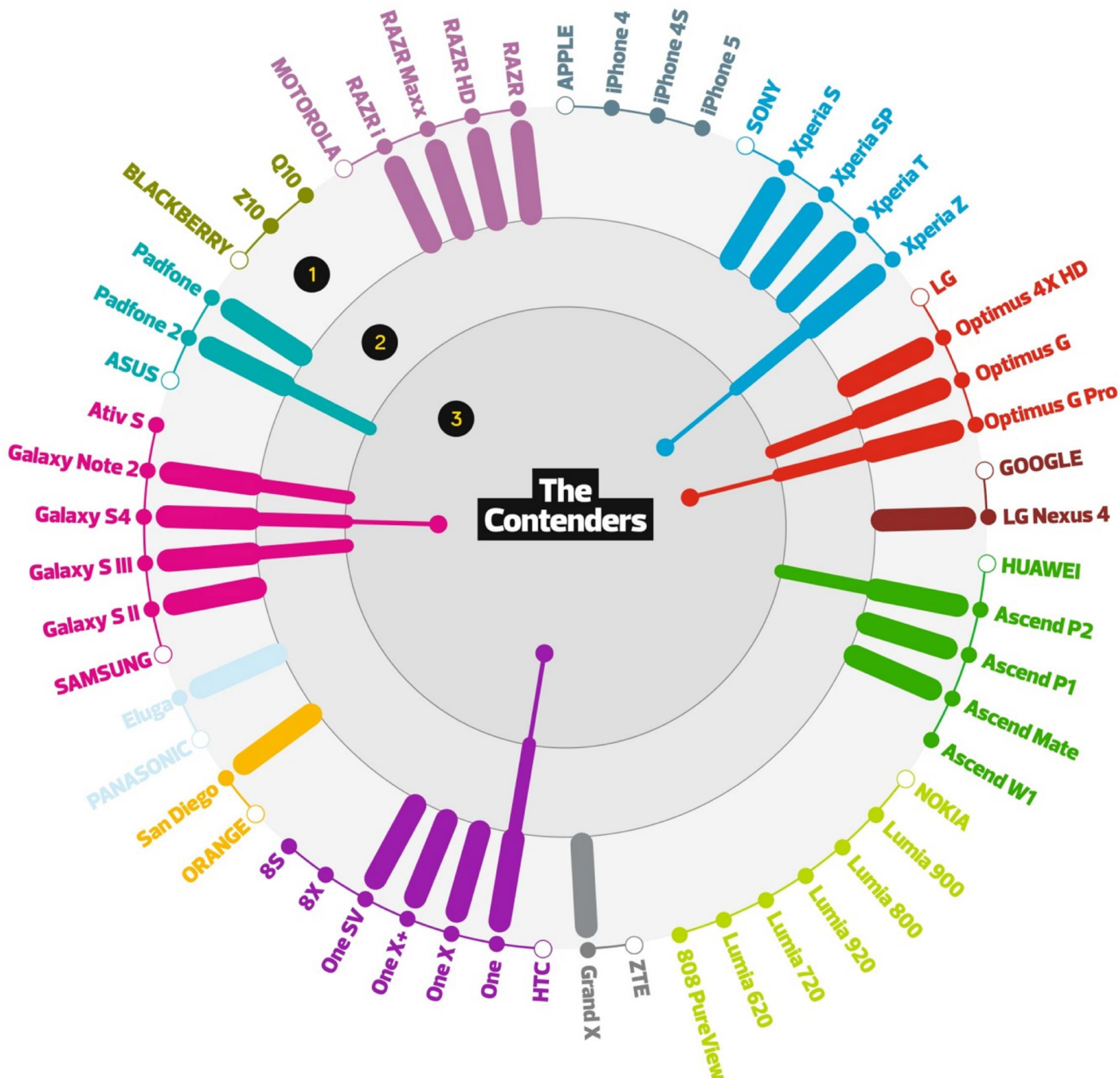


Gadget percolator®

Here's how we got rid of non-essential handsets to handpick Android's finest

KEY

- 1 **OS** Android 4 is 2013's most innovative smartphone OS, so rival platforms are out
- 2 **Specifications** Quad-core CPU, 16GB+ storage and 4G are essential for a flagship device
- 3 **Screen size** We're looking at big screens: 4.5in or greater, with at least 1080p resolution



What we tested



● Sony Xperia Z

The sell By taking tasty titbits from its well-stocked TV and camera larders, slapping a slab of full HD screen on top of it, then making the whole thing waterproof, Sony's made a phone to lust after. About time, too.



● Samsung Galaxy S4

The sell The future. The bestseller. The thorn in Apple's side. The S4 was supposed to be many things but even we couldn't predict how much tech Samsung would be able to pack into one handset. Is any of it actually useful, though?



● HTC One

The sell The One sets a new standard in Android smartphone design and rocks the simple but lovely Sense 5 UI. With the unique UltraPixel camera also on board, it's not afraid to forge its own course through Android's choppy waters.

And what didn't make it in

● LG Optimus G Pro

A 5.5in full HD screen, 4G and quad-core Snapdragon innards sounds about right for a superphone scrap. But LG's long-in-gestation flagship still doesn't have a UK launch date.

● Huawei Ascend P2

It's billed as "the world's fastest 4G phone", but with a quad-core brain and sleek design, the P2 has a lot more going for it than just speed. But its screen is a 'mere' 720p. Rubbish, eh?

● Google/LG Nexus 4

The Nexus 4 just can't compete with the 1080p brigade and also offers far too little storage. So despite its incredible price and impeccable form factor, it misses out this time round.

THE VITALS

What a 2013 Android needs to nail to earn Stuff's approval

SCREEN

You might have noticed the smartphone race to become all-screen, so obviously these flagships will live and die on the strength of their displays. Colours, contrast and detail are all important, but being readable in direct sunlight and reacting swiftly to the touch are also crucial.

BATTERY LIFE

Our feelings towards any smartphone could be plotted on a graph with the number of times we have to reach for the charger along one axis. So much so that 'how's the battery life?' is often the first question we ask. We know we can't have our nifty new features cake without it eating into battery life, but our phone dying by lunchtime isn't acceptable either.

CAMERA

This is the second question we ask. We're not looking for a compact cam squeezed into a smartphone (although we'd take it if we could get it) — we just want a quick and easy-to-tweak camera interface for daytime pics together with settings to dive into when we're feeling snappy. Oh, and excellent indoor and low-light abilities.

PERFORMANCE

The inevitable sprucing up of Android by each manufacturer can have a big impact on how your OS looks, what it can do and how smoothly each smartphone runs. How do the speakers sound? Can it multi-task without running home to mother? And will you use extras such as an IR blaster?



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Film freaks and telly addicts should feast their eyes on the Z

Sony's decidedly grown up Xperia Z would no doubt look down its nose on the S4's over-the-top showmanship – if indeed it had a nose. As it is, this slab of serious sound and vision smarts is all about subtlety. Its discreet design manages to make both the S4 and HTC One look like exhibitionists, and despite this

quietly solid build it's actually waterproof, able to survive up to half an hour submerged – trust us, we've checked.

Head on, the Z's 1080x1920 Reality Display matches the HTC's, but while movie buffs will appreciate the stellar contrast and natural colours, the One is easier to hold and the Z disappoints as

soon as it's tipped even slightly to each side. Still, Sony has some big advantages – the Music and Video Unlimited on-demand services are excellent, especially if you're committed to a Sony set-up at home already, sound is punchy (through decent cans) and battery life is very good. Plus, the Z's 13MP camera borrows a

Superior Auto mode from Cyber-shot compacts meaning that on-the-fly snaps look great with minimal effort.

Yes, it lacks the raw power of the S4 and the iconic good looks of the One, but for music, movies and all-round use – with the added bonus of waterproofing – the Xperia Z is a top phone.

● SONY XPERIA Z £410 (16GB) ★★★★★



1 All the Z's ports, including the headphone socket, are covered by flaps to keep it waterproof. Challenge a mate to find the microUSB port in the name of hijinks.

2 The Z feels blockier and bigger than the other two, so it's not one for the teeny of hand. Then again, its tempered glass looks lovely and feels premium.

SCREEN Text appeal

The Z is a visual treat: text on ebooks and web pages looks phenomenal and with the exception of slightly faded blacks, colours are top notch in apps and movies. Off-angle it looks atrocious, which is a real shame.



BATTERY LIFE Standby for victory

The Xperia wins on standby skills: with the data-killing Stamina Mode on, it'll only drop by 1% overnight. You don't use it at night, right? It also lasted a very respectable 7.5hrs in our video rundown test.



CAMERA Exmor of the same

With the Samsung (probably) using Sony's 13MP Exmor sensor in its own camera, it's not surprising that there's little between them. Both take superb macro shots with accurate colours but the S4 is more versatile.



PERFORMANCE No lagging doubts

Unlike the S4, Sony's lightly customised version of Jelly Bean is blissfully lag-free. It also multi-tasks and games like a pro, despite being clocked slower than its rivals. Lacks a killer feature to help it stand out, though.



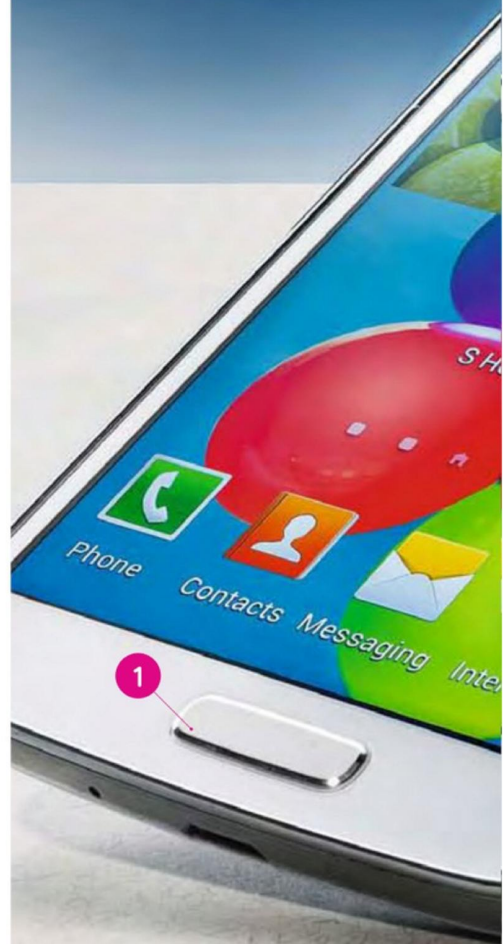
Raw power, ingenious touches... and just a bit too much plastic

Performance is super-quick, but it's not without crashes and glitches. More chronic still is the S4's sub-premium, plasticky feel: it simply doesn't have the pride of ownership of its rivals. A brilliant phone, then – but not our winner.

● SAMSUNG GALAXY S4 £480 (16GB) ★★★★★



eye-catching in Dynamic, but for everything else you'll want to stick to Standard, where colours still look slightly oversaturated but deep blacks make up for it. Movie mode, on the other hand, looks washed out and smudgy next to the superior displays of the Xperia Z and One. And who wants to keep switching between modes anyway? At least the S4's screen is great outdoors, as it doesn't have such a thing as a low brightness setting.



1 We hit the home button 100 or so times a day, so well done Samsung for keeping it front and centre. Sony's button looks great, but it's a stretch to use.

2 The S4's LED indicator glows red when it needs charging and for missed calls but we prefer the way the HTC's peeps through its top speaker grille.



PERFORMANCE
Power and the glory
A software update has improved the S4's performance, but it's still prone to crashes and glitches. That aside, the quad-core 1.9GHz Snapdragon processor is unerringly gutsy, allowing for seamless, real multi-tasking and smooth gaming.



BATTERY LIFE
Win some, lose some
The swappable 2600mAh battery is the biggest here, but then that 5in full HD screen needs plenty of fuel. The result? You'll generally get more than a day out of it, but if you hammer 4G and high-end games that figure will obviously be lower.



A life less storagey?

Tom Parsons

It's easier than ever to live life in the cloud – but beware. In a world in which you can stream music from Spotify, store docs in Dropbox and watch TV on iPlayer, you might think onboard storage doesn't matter. But apps still take up space, as do HD movies. All of which makes the S4, with its 64GB version and option to add 64GB more, the obvious choice for the giga-greedy.

The best of Android, iPhone and Windows all rolled into One

Hands-down the HTC makes the best first impression of the three.

Cool aluminium, a painstakingly crafted build and easy to hold curves elevate it to Apple levels of smartphone design. But style like this doesn't come without a price: there's no removable battery or even a microSD slot.

So why are we still grinning?

The sharpest screen on test at 468ppi remains the one to beat, with superb viewing angles, natural but vivid colours and pure whites. Sense 5 is also the neatest, smoothest Android skin here, and while the One might be waiting for a few features only found in the latest 4.2.2 build of Jelly Bean, none are deal-breakers.

More importantly, it's never once shown any sign of slowing down during testing.

Stills and video taken with HTC's innovative UltraPixel camera are excellent, there's an IR blaster to control your telly, and while battery life is a bit disappointing, it at least matches the S4 and Xperia in lasting the whole day.

Every phone has its foibles but they're hard to find on the One. It's as desirable as an iPhone, offers a supremely capable Android experience and – with BlinkFeed's news stream and Zoe's "living photos" – even squeezes in a nod to lively Windows Phone-style updates. You can't get a better mobile than this right now.

● HTC ONE £500 (32GB) ★★★★★



1 Sense tweaks to get you started: swap your app drawer to a 4x5 grid and uncheck foreign languages in keyboard settings. You're welcome.

2 With only 32GB on board and no expansion slots, storage is an issue. Get yourself a Spotify account straight away. You've got no chance otherwise.

SCREEN

Screen-age kicks

We love the One's screen and 4.7in is plenty big enough for us. It's super-sharp, using an SLCD display as opposed to the S4's PenTile. That makes for crisp text, plus crank up the brightness and it's also the best outdoors.



BATTERY LIFE

Killing Zoe

So which are the main culprits for draining juice? Zoe, for one, is best left alone if you're worried about lasting the day, but Sense itself needs a fair amount of power too. The Power Saving mode really does come in handy.



CAMERA

Ultra by name...

HTC recently rolled out an update to its UltraPixel cam, improving detail and pumping up colours so that they're not always 100% true to life but look gorgeous. UP is great in low light, but as it's only 4MP, you can't zoom far.



PERFORMANCE

As good as it gets

The One runs as smooth as an ice cream-powered Merc, with not a hint of lag whether you're hammering big games, flicking through apps or browsing the web. Those front-facing speakers sound great, too.



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THE WINNER IS... HTC ONE



Despite a mighty onslaught from the S4, the One is the phone we'd buy. But the S4 has taught us some sage lessons. For one, we need to update the list of tech our smartphones have swallowed up like huge, rainbow-coloured, full HD sharks hungry for gadget small fry. So, it's farewell to fitness trackers, motion sensors, barometers...

For two, it's reiterated that the most important gadget decision you'll make all year will be what your next smartphone is. And the key is going for the one that gets right what you need it to get right.

For storage and camera (just) it's the S4. For media and waterproofing, go for the Xperia Z. But for almost everything else – using apps and games, browsing, messaging and sheer pride of ownership, it's the HTC One. See, we just made your decision easier.



+ Now add these

1 Mophie Juice Pack for HTC One

It'll add a bit of bulk to your HTC, but this Mophie pack designed for the HTC will double the One's battery, and give it some extra protection to boot.

£90 / mophie.com

2 Cambridge Minx Air 200

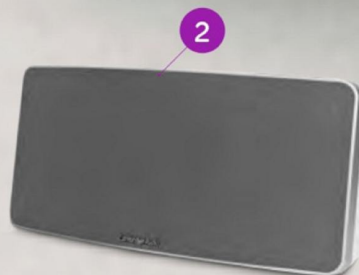
The One's speakers are fine on the go, but this outstanding Bluetooth- and Wi-Fi-streaming speaker will turn it into your main home source component.

£430 / cambridgeaudio.com

3 KEF M500

If the silver HTC One takes your fancy you'll love these similarly styled KEF cans, which look great, sound fantastic and come with an in-line remote.

£250 / kef.com



THE SUMMARY

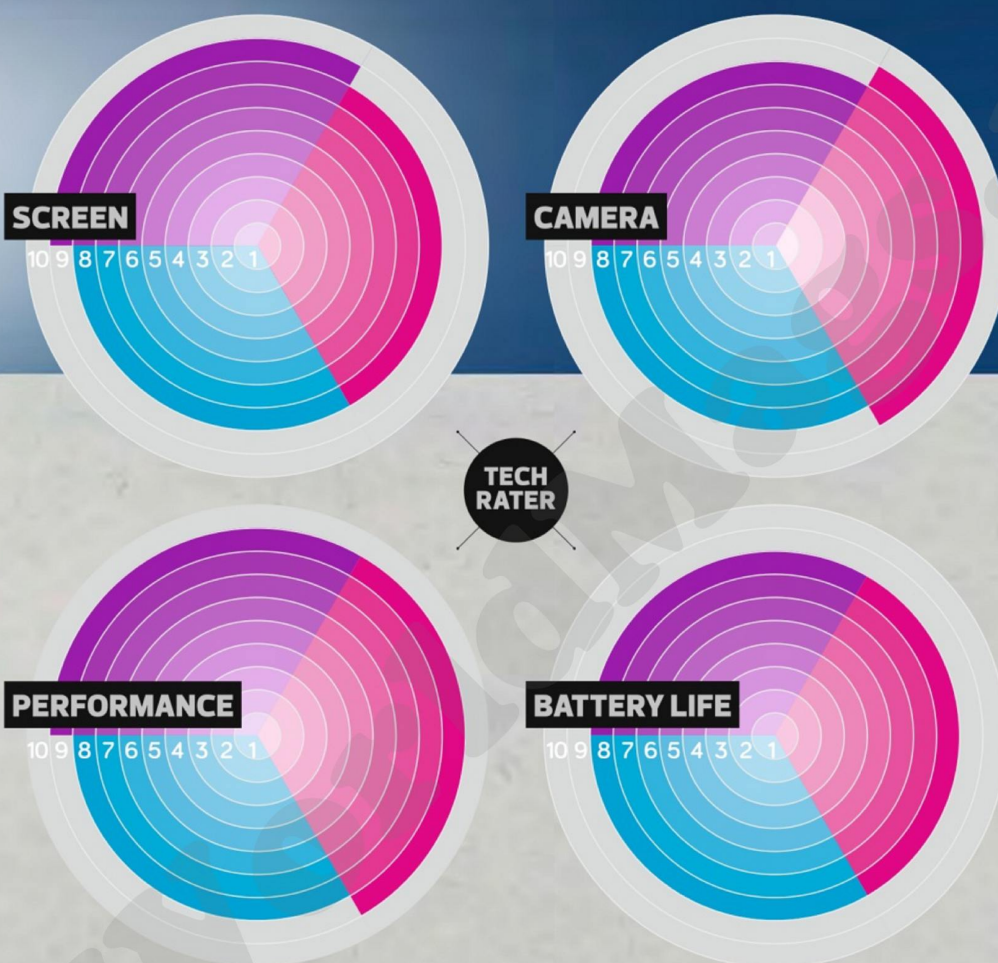
● HTC One ● Samsung Galaxy S4 ● Sony Xperia Z

WHAT'S NEXT?

For starters, we'd wager, the return to form of iOS... It's now more than a generation since a phone running iOS topped our list of mobile masterpieces. Since the HTC One X beat the 4S in July 2012, it's been Android all the way; the iPhone 5 didn't spend a single week at No.1. But the tide could soon change. With Jony Ive in charge of software design at Apple HQ, a more alive-feeling refresh of iOS looks certain. That, together with a few tweaks to the iPhone's hardware – a sharper screen? Tougher finish? Battery life? – would make choosing your smartphone platform a real brain-melt. And then there's Windows Phone 8: the new Lumia 925 looks impressive, and the OS is due an 8.5 update towards the end of 2013. A few more choice apps and it could be a contender. But then, Android 5 should soon arrive on the rumoured Motorola 'X' phone... and move the goalposts all over again.



follow Sophie:
@sophiecharara
email Sophie:
sophie@stuff.tv



1st	 HTC One ★★★★★ The most desirable Android handset ever, running more slickly than any rival and with a screen to make you swoon? Yes please. £500 (32GB) / htc.com	4.7in, 1080x1920, 468ppi Super LCD	Quad-core Qualcomm Snapdragon 600 @ 1.7GHz	4MP, 1080p (rear); 2.1MP (front)	Bluetooth 4.0, aptX, microUSB, NFC, 3G, 4G	2300mAh	137.4x68.2x 9.3mm, 143g
2nd	 Samsung Galaxy S4 ★★★★★ The S4 prioritises power, storage, battery and camera skills over looks, making it the most supremely useful phone ever. £480 (16GB) / samsung.com	5in, 1080x1920, 441ppi, Super AMOLED	Quad-core Qualcomm Snapdragon 600 @ 1.9GHz	13MP, 1080p (rear); 2MP (front)	Bluetooth 4.0, aptX, MHL 2.0, NFC, 3G, 4G	2600mAh	136.6x69.8x 7.9mm, 130g
3rd	 Sony Xperia Z ★★★★★ The Z has next to no flaws: it's beautifully built, with a stunning screen and media smarts aplenty. If films are your thing, get it. £410 (16GB) / sonymobile.com	5in, 1080x1920, 443ppi, TFT	Quad-core Qualcomm Snapdragon S4 Pro @ 1.5GHz	13.1MP, 1080p (rear), 2.2MP (front)	Bluetooth 4.0, MHL, NFC, 3G, 4G	2330mAh	139x71x 7.9mm, 146g



FESTIVAL FUN HOME COMFORT

SO YOU COULD EITHER GO TO A MUSIC FESTIVAL THIS SUMMER – OR YOU COULD MAKE IT COME TO YOU...

There's very little like a British music festival in the summer. Yes there's the weather roulette, interesting food and warm beer but there's also the unabashed joy and celebration of music, noise, crowds and fun – mud mountains or not. It's not ideal if you have to miss out on your annual festival hit but what if you could bring the music home to your own garden? What if you had the screen and the sound-system

that could replicate that festival feel within walking distance of your fridge? Glasto in comfort with a perfect view would be one of life's good moments...

To point you in the right direction, here's a home cinema kit that's guaranteed to make Home Fest sing: **The world's first 84-inch UltraHD from LG** – it's four times bigger than a 42-inch TV and Ultra HD has a screen resolution four times greater than Full HD. It is

perfect for broadcasting a full-blown gig to a home-sized crowd. And if you turn on the 3D you'll instantly be dodging crowd surfers and punching beach balls.

But you'll also need great audio. LG's epic **Home Cinema System 9.1CH** has it all: built-in Wi-Fi; wireless rear speakers so you can position them anywhere; 3D sound zooming. This is a home-cinema set-up that both puts all festival goers in the centre of the action and keeps it real.



Festivals to enjoy at home this summer

Isle of Wight 13-16 June

The Isle of Wight is a small place even before the festival arrives. Add a few extra thousand people and it becomes a bit cramped. Instead, keep your feet on solid ground and enjoy the acts including The Stone Roses, Bon Jovi and The Killers on the **Sky Arts channels**.

Download 14-16 June

Enjoyed watching The Stone Roses at the Isle of Wight? Flick over to **Scuzz TV** on (Sky) and you'll be able to see Queens of the Stone Age the following day at Donington Park, this time at Download Festival. You wouldn't be able to do that if you were camping on an island.

Glastonbury 26-30 June

If there's a festival worth enduring it's Glastonbury but tickets aren't everywhere. Fortunately the **BBC's** coverage is top-notch meaning you don't have to feel locked out. Pitch a tent in the garden and cook on a disposable BBQ to get the full effect and you won't miss much.

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YOUR GUIDE TO MAKING
THE MOST OF NOW

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You've struggled with Papa Bear's 10in tab, and broken Baby Bear's 5.5in phablet. Will a mid-size media marvel be 'just right'? And will Mummy Bear let you have a go?

Samsung Galaxy Note 8.0

The contender

This is the first Samsung tablet we've been excited about for a while. It's a shrunk-down Note 10.1; an iPad Mini rival with a quad-core processor and a handy stylus. But it's also a sized-up Note II, as the 3G/4G version can make voice calls. Plus, the Note 8.0 has a much improved Multi-Window split screen feature, which now handily supports Google apps such as Chrome, Maps and YouTube. A microSD slot for adding up to an extra 64GB and a huge 4600mAh battery complete the geek's wishlist, but style gurus might be disappointed by the Note's cheap-feeling fit and finish.

Eight and great?

Ignore the slightly creaky plastic and the Note 8.0 puts in a brilliant performance. It's as light as the Mini and, thanks to its widescreen form, is the easiest of the current crop of 8in tablets to clasp, making two-thumbed email messaging in portrait mode speedy. It's smooth and responsive, packs a solid 8-9hr battery life and its 1280x800 screen is vibrant, albeit with a tendency to over-amp colours. Only the below-par 5MP cam and bizarrely high price tag let the Note 8.0 down. Oh, and the Google Play store: it's still the case that no Android tablet can touch Apple for quality and variety of apps.

Tech Android 4.1.2 • quad-core 1.6GHz Exynos A9 • 2GB RAM • 16/32GB (+ up to 64GB microSD) • Up to 9hrs battery • 8in, 1280x800, 189ppi • 5MP rear, 1.3MP front • 211x136x8mm • 340g
Price from £360 (Wi-Fi), £465 (3G/4G) / samsung.co.uk

STUFF SAYS ★★★★★

A multi-tasking and note-taking powerhouse, but a tad pricey



Samsung Galaxy Note 8.0

Amazon Kindle Fire HD 8.9

Apple iPad Mini



Amazon Kindle Fire HD 8.9

The contender

Whereas the 7in Kindle Fire HD made a great web browser, e-reader and small screen for movies, this 8.9incher should make more sense as a fully blown tablet. That said, it's necessarily bigger and bulkier than either the Note 8.0 or iPad Mini, and that grown-up tablet feel makes it harder to accept Amazon's walled garden approach, which cuts off whole chunks of the Play Store from its users. What do you get in return? A mesmerising Amazon shop window, rendered in crisp 1920x1200, with easy access to its prodigious library of books, music and movies, and a solid all-day battery life.

Eight and great?

The Fire HD's screen earns its name – text is rendered more cleanly than on the Mini while photos and flicks display luscious colours, so it's only the off-whites that let it down. Amazon's heavy skin of Android is big, bold and welcoming – much more so than anything Samsung or Sony has come up with lately. But it masks what the 8.9 can do: email, browsing and file playback are pushed back, which is frustrating if you know your way around Android. Coupled with just a single camera for video calls and a ponderous Silk browser, the Fire's bulk is writing cheques that its functionality can't cash.

Tech Android 4.0 • dual-core 1.5GHz OMAP4470 • 1GB RAM • 16/32GB • 8.9in, 1920x1200, 254ppi • up to 10hrs battery • 1.3MP camera • HDMI • 239x163x9mm • 567g
Price £240 (16GB), £280 (32GB) / amazon.co.uk

STUFF SAYS ★★★★★

Ideal for tablet newbs, but both the Note and iPad outgun it

Apple iPad Mini

The contender

Apple's small slate might have been late to the plate, but the 7.9in iPad Mini has since sidled past its big brother on many a gadgeteer's team list. It feels lighter and slimmer than its specs suggest, and so is less likely to be left at home than the blubbery iPad, runs all the same brilliant apps and is the most affordable entry into the world of iOS. It comes with Siri, a 5MP cam that smashes those of the other tablets in this test, and optional 3G/4G. The catch? The 1024x768 screen that makes text and homescreens look less than sharp, though it's still a useful 4:3 shape and has superb contrast and colours.

Eight and great?

Sleek and skinny, the aluminium Mini is much better looking than its 8in nemeses – a fact that keeps case pedlars in beer money. Once you've waded through the huge app store, downloading and using software is hiccup-free. The battery lasts well over a day and iOS remains easy to get to grips with. That said, it's looking increasingly dated against the clever tricks and pen-flips of the Samsung; iOS 7 can't come soon enough. But even so, an app selection that turns the Mini into anything from a pro audio recorder to a console nabs it top spot. And to think, a Retina Display Mini is rumoured to be on the way too...

Tech iOS 6 • dual-core 1GHz A5 • 500MB RAM • 16/32/64GB • 7.9in, 1024x768, 163ppi • up to 10hrs battery • 5MP rear, 1.2MP front • 200x134.7x7.2mm • 312g
Price from £270 (Wi-Fi), £370 (3G) / apple.com/uk

STUFF SAYS ★★★★★

Ignore the screen's retro res; the blingy Mini is a slim winner

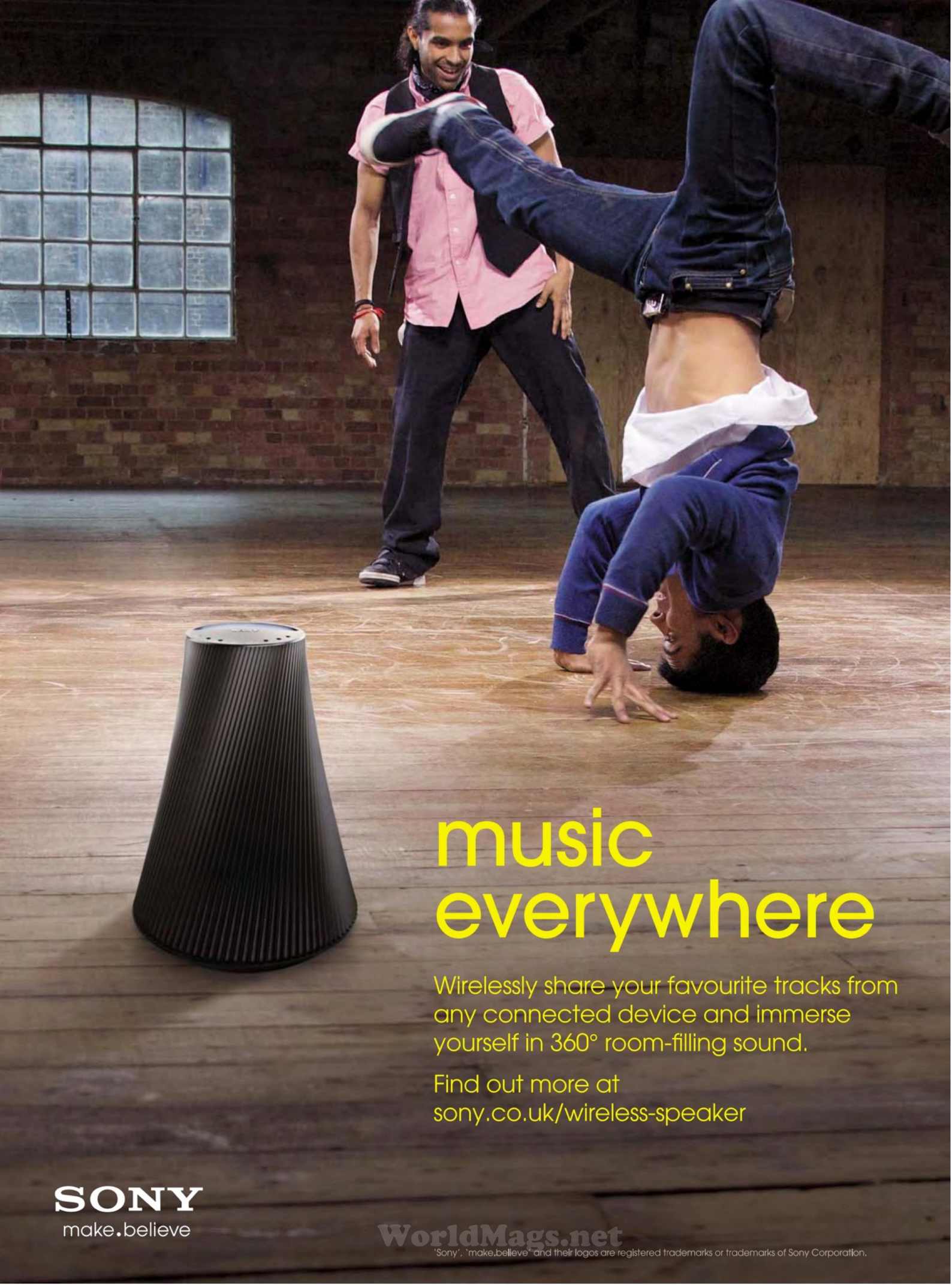
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TESTED BLACKBERRY Q10

LET'S GET PHYSICAL

Capable of giving a city trader palpitations, this is the revamped BlackBerry addicts have been paying for. How does it fare in a world of giant touchscreens?

■ Our thumbs confirm that the Q10 has BlackBerry's biggest and best keyboard yet and, after an eon of insubstantial haptic touchscreen feedback, using it feels *really* good. Excellent word predictions, a million handy shortcuts and BlackBerry 10 OS' nippy multi-tasking will turn you into a messaging god.

■ At 3.1 inches, the Q10's touchscreen is undeniably tiny. You won't be watching movies on this. However, it's a razor-sharp, responsive and colourful AMOLED effort, and its pokiness spells great news for battery life: low power drain combined with the 2100mAh battery means the Q10 will still be kicking after days of hiring/firing.

■ The Q10 runs the new BB10 OS, and, even on the small screen, we're impressed with its minimalist gesture-based interface. At its centre is the powerful unified messaging hub that lets you access everything from texts and emails to BBM messages and Twitter, in one giant pigeon-hole-on-steroids. Android and iOS don't come close.

■ BlackBerry World remains painfully short of quality apps. Hooray for Angry Birds Star Wars, WhatsApp and Skype, but still no Instagram or Google Maps? Come on, guys: we won't wait forever.

Tech 3.1in, 720x720, 330ppi, Super AMOLED • 1.5GHz dual-core • 2GB RAM • 8MP rear, 2MP front • 16GB, microSD (up to 64GB) • 119.6x67x10.4mm • 139 g
Price £530 / blackberry.com



The key(board) to happiness

Work Inbox balling

If you're used to touchscreen keyboards, the Q10 will have a bit of a learning curve. But even up against brilliant 'boards with personalised error correction such as SwiftKey, our experience suggests you'll soon find the Q10 faster and just as accurate.

Play Gaming shortcuts

The keyboard also comes into its own when gaming, with the likes of *Need For Speed: Undercover* using keyboard controls for braking and speed boosts. Given the Q10's smaller screen and *NFS'* frenetic action, they're pretty much essential.



STUFF SAYS A masterclass in productivity, in dire need of more decent apps ★★★★★

Why the Q10 just bumped the Z10 out of the Top 10

Esat Dedezade
@esatdedezade



Flick to the back of the mag and you'll notice that the Q10 has replaced the Z10 in our Top 10 Smartphones list. While the Z10 is a decent smartphone in its own right, it doesn't successfully differentiate itself from the HTC One or iPhone 5. But the Q10 – despite its screen size and app shortcomings – is a true BlackBerry, aimed at multitasking messengers for whom its keyboard is reason enough to turn a blind eye to any flaws.



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Promotion available on new Abarth models registered before 31st March 2013. With Advance Payment Plan you have the option to return the vehicle and not pay the final payment, subject to the vehicle not having exceeded an agreed annual mileage (a charge of 6p per mile for exceeding 10,000 miles per annum in this example) and being in good condition. *Deposit amount is typically between 43% to 59% depending on term, model, and mileage. Terms and conditions apply. Finance subject to status. Guarantees may be required. Abarth Financial Services, PO BOX 4465, Slough SL1 0RW.

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5 OF THE BEST

PORTABLE SPEAKERS

Beach, park, hotel: these battery-powered Bluetooth noiseniks will amp up your smartphone tunes wherever you wander



Bass ace

The JBL's built-in bass port gives it a surprisingly weighty sound, but you'll need to stand it on its end to get the very best from it.

WHAT TO LOOK FOR

● **NFC** Near Field Communication. Pairing Bluetooth devices requires delving into menus; NFC is easier. Just rub two compatible devices together to seamlessly link them.

● **USB** Bluetooth is great, but smartphones are notoriously weedy around the battery area. A USB port on your speaker lets you charge and play. You hip, you hop, and you don't stop.

JBL Charge

Out of the box

If there were Bluetooth speakers on the Death Star, this is what they'd look like. Its body is mostly made of tough white plastic, with a metal speaker grille and rubberised extremities. It's light on controls, with just volume and power/pairing buttons on top, but versatile in use, working whether you stand

it up or lie it down. At one end is a big bass port; at the other, a little flap. Open this and you'll find a USB output for charging devices while you play.

Into your ears

Close your eyes and you'd struggle to believe the sound is coming from something the size of a beer can. And it's not just a

big sound that the Charge produces easily – it's a very competent one. The high frequencies are crisp, the bass is taut, and everything is nicely balanced. It also gets plenty loud without the slightest hint of distortion, which usually signifies when a speaker wants you to stop. Not so with this one – it just charges right ahead.

Tech 2x5W output • USB charging • 12hr battery • 175x74x74mm • 470g **Price** £120 / jbl.com

STUFF SAYS ★★★★★ A great mix of portability and performance, the Charge sounds bigger than it looks



It's good to talk

Pair the BTM8 with your phone and you can take hands-free calls (with added swearing from your mates) on it.

Good cover version
The P9's clever leather cover can be angled to alter the sound, or closed to send the speaker to sleep.



Sony SRS-BTM8

Out of the box

This sonic handbag is the only speaker here that has NFC, enabling you to pair your phone or tablet with a touch. There are standard pairing controls for non-NFC devices, of which there are many, as well as buttons for power, play/pause, volume and phone calls. There's also a 3.5mm input for kicking it old-school and, with four AAs onboard, you can swing this baby around town for 'up to 20 hours'. There's nowhere to keep a lippy, though.

Into your ears

Pairing is really easy, thanks to that NFC. Once you're up and running, the BTM8 pushes out a decent amount of weighty bass, with good control and a high level of detail. Occasionally there's a touch of thinness to the treble, but for the most part it handles a variety of music rather well. It's happy with high volumes too, maintaining composure even as you crank it up a few notches. If the styling appeals – it's also available in white – go for it.

Tech 2x2W output • NFC • 3.5mm input • 20hr battery
• 185x245x88mm • 1.06kg **Price** £60 / sony.co.uk

STUFF SAYS ★★★★★

Your eyes and ears will love the Sony almost as much as your wallet will

Philips Fidelio P9

Out of the box

If you need a small box, but want a big sound, Philips has you covered. The P9 isn't tiny, mind you; it's definitely in the rucksack quadrant of the portability scale and weighs 1.8kg. But, it's a seriously smart-looking piece of kit, with a classy anodised aluminium grille framed by wood. Attached is a clever leather standby-toggling cover/stand that will raise 'brows at Apple and Bose. There's a USB port for charging and 3.5mm too.

Into your ears

For its size, the P9 puts out a wide and spacious sound, with the ability to get plenty loud without ever hardening up. Frequencies are nicely balanced, which gives music a natural feel, but with enough energy for an entertaining listen. Pairing can be a little hit-and-miss, but that's us being über-picky. If you don't like the leather cover, try the P8 model: £40 cheaper, 800g lighter and yet it still matches the P9's eight-hour battery life.

Tech 2x10W output • 3.5mm input • USB • 8hr battery
• 287x127x63mm • 1.8kg **Price** £240 / philips.co.uk

STUFF SAYS ★★★★★

Expensive, but if you splash the cash, you'll reap the class



Sitting on its oomph

The Hive has a passive radiator at the bottom: despite its small size, it thumps out a satisfying level of bass.

Gnarly noisemaker

Resistant to shocks and splashes, this one's prepared for that dirty weekend you've been planning. Or a nice hot bath.

KitSound Hive

Out of the box

The Hive's bee theme is rather apt, because it's the smallest speaker in this test – knocking on half the size of the Sony and Philips. A honeycomb design dominates the surface, including the buttons, the feet and the grilles. Like a bee, it feels lovely when you stroke it though, like a bee, you feel you ought not be doing so. But, despite its soft texture, it feels tough enough to withstand a life on the wing. Ten-hour battery life, too.

Into your ears

It's an industrious performance from this little guy. There's decent clarity and detail at the top end, voices are smooth at the midrange and, thanks to a dedicated bass driver, there's just enough bottom-end punch to add depth to your tunes. There is, however, a sting in the tail: crank the Hive to high volumes and it begins to lose composure, with things getting a little shouty and strained. More picnic than party in the park, then.

Tech 2x2.5W output • 3.5mm input • 10hr battery • 165x64x49mm
• 454g **Price** £75 / kitsound.co.uk

STUFF SAYS ★★★★★

It's not one for loud volumes, but it wins points for price and petiteness

Braven BRV-1

Out of the box

This one likes to be knocked about a bit. With a very thick rubber enclosure and gnarly styling (lot of screws), the BRV-1 has an IPX5 rating, which means it can handle life in the shower, or early morning dew down at the BMX track (but don't take it wakeboarding). Twist open the hatch round the back and you'll find a microUSB port for juicing it up, a full USB output for charging other gadgets, a 3.5mm input and a power meter button.

Into your ears

Claim something is resistant to shocks and splashes, and we're going to put that to the test. The Braven survived stair and shower encounters at Stuff Towers – we're confident it's tough enough for the messiest of festivals and bike rides, and its 12-hour battery life should last the distance too. The sound it pumps out is big for a 350g hunk, with plenty of detail and enough power, but it could be a little louder. It's a tad pricey, too.

Tech 2x3W output • 12hr battery • 127x83x57mm • 346g
Price £150 / braven.eu

STUFF SAYS ★★★★★

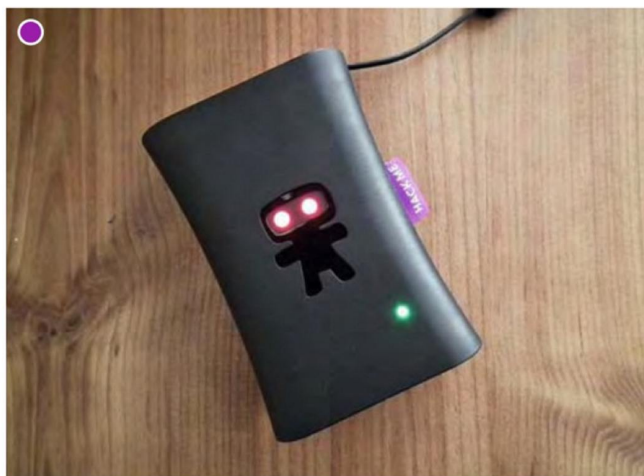
A decent speaker that can handle the drips and drops of life

🕒 504 HOURS WITH THE

NINJA BLOCK

Henry Winchester spends three weeks risking life and love with an enigmatic internet of things box. But first he has to work out what it actually does...

US\$200 / ninjablocks.com



DAY 01

Unboxing my Ninja Block is a disappointingly ungeeky experience. I had dug out my soldering iron and was expecting printed circuit boards, dozens of capacitors and resistors and a hand-scrawled manual that would prove incomprehensible to anyone without a degree in cryptography. Instead I get a sleek pre-built unit about the size of a portable hard drive, and an Ikea-like card with simple step-by-step instructions. I unplug my soldering iron.

Under the Ninja Block's plastic carton lies an array of wireless

a quick Amazon search reveals that I can buy similarly tacky-looking kit such as light dimmers and power sockets for very little cash. This is where Ninja Block gets awesome, because it can – in theory – control each and every one. But do I want to integrate Tic-Tac box widgets into things as crucial as my house lights and thermostat?

Setting up the Ninja Block itself is straightforward enough – it's simply a question of plugging in the power and Ethernet cables and visiting a webpage. I did worry that it would be permanently attached to my router, but a small USB Wi-Fi dongle connects to the unit so it'll



"I've finally worked out how to change the Ninja logo's eyes. So I set them to red and pretend it's a tiny Terminator"

sensors that look like they've been pulled from the depths of a bargain bin in a Tottenham Court Road tech shop. There's a PIR sensor, which detects movement; a magnetic latch, which connects to doors and senses when they're opened; a doorbell, which doesn't actually function as a doorbell; and a combination temperature and humidity sensor. They're all made of that thin off-white plastic so beloved of cheap Chinese tech.

The fact that the accessories feel a bit cheap is kind of the point, though – each operates on the same 433MHz RF frequency, and

work nearly anywhere in my flat. Hide it, or proudly display it?

Now that my Ninja Block is set up, it should be easy to connect all its shoddy plastic bits of tech, right? Wrong. While internet instructions take me through the basic steps, I'm pretty much on my own. It takes me a while to realise that the wireless range is truly awful, so I have to have the Ninja Block within vicinity of the various sensors. But I have worked out how to change the colour of the Ninja logo's eyes. I set it to red and pretend it's a small, rectangular Terminator.





Tech specs

OS Ubuntu Linux on Arduino/Beagleboard architecture

Connectivity Wi-Fi (via adaptor), Ethernet, 433MHz RF, USB2.0 port, Ninja ports (x3), microUSB, microSD

Accessories PIR sensor, doorbell, temperature and humidity sensor, magnetic switch

Dimensions 112x43x79mm, 149g



DAY 02

Tuning in the Ninja Block's sensors is rickety, and requires much fore and aft between the bit I'm trying to connect and the web interface. I get the doorbell to work, and gleefully spend the rest of the day pressing the button and watching the notification pop up on my PC.

DAY 06

Finally, I get the temperature and humidity sensor to work, and I can see what's going on in the kitchen via my computer. It's 19°C and humidity is at 60%. I don't really need to know that. But it works!

DAY 07

My girlfriend finds the hideous temperature and humidity sensor in her perfectly-organised kitchen, and I have to pick it out of the bin. I feel sad. I embark on another project and stick the motion sensor in the bedroom and instruct it to text me whenever there's movement.

DAY 08

I wake up to find 127 texts on my phone, but then see they are all movement alerts from Ninja Block. I briefly wonder who's paying for them, before reaching to turn off the motion sensor. Which triggers another text message.



DAY 14

I've linked a webcam up to the Ninja Block, and configured it so it starts recording when the motion sensor detects motion. And it works magnificently. I'm seriously tempted to leave the front door open to tempt a burglar in, just so I can post it on Tumblr.

DAY 18

Everything's working in unison now: the door sensor, the motion detector, and the humidity and temperature monitor let me know exactly what's going on in my flat while I lounge in a Dorset hotel. The great thing about Ninja Block's web interface is that I can access it from any browser, even the one on my phone. There are also iOS apps, though they're heavy with the scent of open-source architecture. (As in, a little hokey.)

DAY 21

My girlfriend has reluctantly accepted that Ninja Block is part of our life now, and she even mustered a little interest when I taught the toilet seat to tweet. Me? The amateurish nature of the add-ons puts me off using it to run my home's infrastructure, but I'd feel deprived if I didn't know precisely how humid my bathroom is right now. 97%. My gf must have just showered.

STUFF SAYS

A tinkerer's dream with vast possibilities, but too DIY for serious home automation

★★★★☆

HACK ME

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MY OM-D

DAMIAN McGILLICUDDY



Minimal kit, maximum effect, is the mantra of multi award winning professional portrait photographer Damian McGillicuddy. Demanding the very best from the equipment he uses, the modern classic of the compact Olympus OM-D EM-5 is never far from his hand.

Yet whilst this Compact System Camera's stunning picture quality is what attracts professionals, the gorgeous retro styling plus affordable price point place the OM-D and its ability to deliver captivating, engaging imagery within anyone's grasp.

With Damian's portraiture taking in both fashion and glamour sprinkled with a liberal dose of sex, he describes the OM-D's appeal as "Dead simple: It's a well conceived and beautifully made piece of kit, coupled with superb optics. Multiply

that by a convenient form factor and you get great results and a pleasurable shooting experience."

ONCE MORE DESIRED

Photographing glamour girls and getting paid for it may sound like a dream occupation; for Damian McGillicuddy it's just another day at the 'office'. "You won't find me prancing around in latex at home", he assures us. The picture opposite is of LA-based Ulorin Vex – one of the world's top latex fashion models.

But it's not just the ladies that fuel the Lord of Latex's creativity. His working hours also include personal shoots for "most celebrities you'd care to mention" – including Beatles mainstay Paul McCartney – some of whom have likewise turned out to be OM-D owners. As a name in demand he is constantly working, with up to four shoots booked per week.

"I'm very lucky in that I've worked hard enough to gain a name for myself and now clients ring up and ask for something that's 'McGillicuddy-esque'."

In terms of the best lenses to twin with the OM-D to ape Damian's style, the photographer recommends the 70mm f/1.8, the 45mm f/1.8 and the 60mm f/2.8 macro.

"I'm a big prime lens fan. Having been in the game for 30 years it was how I was brought up. Plus when I'm photographing people I'm always looking to compress perspective for a more flattering effect. In simple terms the longer focal length makes noses shorter.

A PASSION FOR PICTURES

"My passion for taking pictures is maintained by the fact that I love what I do and it's a privilege to be paid for it. As to where the inspiration comes from, I like clever words and lyrics; rock songs get the brain working."

Naturally, truly great photography is all about mastering light and Damian McGillicuddy has been called 'the Wizard of Light' in his time. Another nickname that has attached itself is 'The Big Dog' – a description that, bizarrely, followed an encounter with EastEnders actor Adam Woodyatt, aka Ian

“IT'S A WELL THOUGHT OUT & BEAUTIFULLY MADE PIECE OF KIT, COUPLED WITH SOME SUPERB OPTICS”

Beale, who attended one of Damian's talks. "I said to him 'listen mate, you may be a star of screen, stage and television' but this is my yard and I'm the biggest dog in it. All of a sudden people were emailing me with 'Dear Big Dog...' Let's be honest, photography is too politically correct these days. People are craving something a bit more rock and roll."

So there we have it: the Olympus OM-D – a classic that rocks.



REDUCED TO PERFECTION

OM-D

www.olympusomd.com



MOTORCYCLE TEMPTINESS

This year, make your summer adventures two-wheeled on one (or more) of these enticing rides...

MULTI-SKILLED MUSCLE BIKE DUCATI DIAVEL

Cruisers are all about leather panniers and living the American dream, but Ducati must have missed a few history lessons. The Diavel combines sportsbike handling with a modern take on the long and low cruiser style, complete with an enormous 240-section rear tyre which had to be custom-made by Pirelli to cope with its 162bhp and its ability to corner and brake like a road racer. History be damned.

www.ducatiuk.com



TAKES THE ROUGH AND THE SMOOTH

KTM 1190 ADVENTURE R

Some 'adventure' bikes should never venture beyond a gravel drive, but the 1190 isn't one of them. KTM dominates bike classes of the Dakar Rally and the V-twin, 1195cc Adventure R growls with the same dirt-loving spirit. And yet, with features such as intelligent traction control and C-ABS also on board, it's as spirited on a winding road or city street as it is carving through crud.

£13,195 / ktm.com

REAL-LIFE LIGHT CYCLE

BMW HP4

The most electronically advanced ride that lots of money can buy, the HP4 is a staggeringly quick sportsbike. The four-cylinder engine produces 193bhp, but an array of aids including traction control, ABS, semi-active suspension and variable power modes do their best to keep it tamed. There's even built-in launch control for wonderfully exhilarating/truly terrifying traffic light take-offs.

from £16,700 / bmw-motorrad.co.uk





CAFE RACER
EVOLUTION

TRIUMPH STREET TRIPLE R

Middleweight naked bikes such as the Street Triple R are the big-selling hotcakes of the motorbike world, and British-born Triumph is leading the way. The Triple R is a masterclass in light handling and proper sporting performance, but the comfortable straight bars mean there will be no physio trips for aching wrists after your epic Sunday rides either.

from £7700 / triumph.co.uk





THE CLEAN CLASSIC HONDA CB1100

You could buy a classic bike. It'll probably leak oil all over your drive, eat money and handle like a supermarket trolley. The new CB1100, though, combines reliability and handling with iconic styling – wide bars, a big air/oil-cooled engine and swept-up exhausts – to create the perfect bike for the '60s nostalgist, minus the puddle of oil beneath it. More smiles; less strife and stains.
£9000 / honda.co.uk

[Words: Jon Urry Pictures: Alex Howe]



[Picture: Wladyslaw]

FASCINATING MOTORBIKE FACTS YOU NEED TO KNOW

First!

The motorbike was invented in 1885 by Gottlieb Daimler. His 1bhp Einspur covered a distance of two miles and hit 7mph ...then caught fire.

Cub-iquitous

60,000,000 Honda Super Cubs have been sold all over the world since 1958. Unhinged bikers have also ridden them all around the world.

Evel Triumphs

Daredevil Evel Knievel secured his fame on a British bike in 1968 when he failed to jump the Caesar's Palace fountains on a Triumph T120. Loser.

One of a kind

The limited-edition '92 Honda NR750 had a V4, oval-piston engine – the most complicated motor ever built. Honda still makes (simpler) V4s.

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TO PROTECT AND PROVIDE

WHETHER TABLET OR PHONE THIS CONNECTED LIFE NEEDS SOME HELP

The age of mobile computing has firmly arrived. Phones are no longer just about calls – they are mini-PCs in your pocket with the power to do almost everything you used to do from your desktop. And that's before you start thinking about tablets. With such sophisticated hardware becoming most people's go-to connected device, it's no surprise that cyber criminals are targeting mobile. The devices themselves and the data they hold need robust defence. That's where Sophos comes in.

Sophos is a well-established security company that provides protection across a number of platforms and it's poured time and energy into creating a tough Android security app, which has been independently tested by West Coast Labs. It'll scan your devices for problem apps, lock, wipe and find them if lost or stolen and can offer advice on secure mobile practice. There's little else you'll need – Sophos' security is a comprehensive and considered approach to Android security and worth investigating.

Data protection

The Privacy Advisor helps you make informed decisions on whether the apps installed on the device are a risk to personal data – do certain apps access certain information without your consent? You'll be able to sort out quickly and easily what apps have requested what access – so you can decide which to keep and which to consign to the bin.

Tips from top

The Security Advisor provides information on how best to improve levels of protection on the device through looking at the current settings and elements within the phone such as Wi-Fi connections, Bluetooth enabling and unknown app sources, along with USB tethering such as connecting a laptop to the web via a phone plugged into the USB port. This offers constructive advice on what you can do to improve security and lower risk based on Sophos' experts recommended settings.

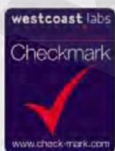




"THE LOCATE OPTION FINDS WHERE THE DEVICE IS TO AN ACCURACY OF FIVE METRES VIA RETURN TEXT"

Health check

Launch a scan for malware (malicious software designed to disrupt normal usage) as soon as the app's downloaded and it produces a summary of discoveries, warning of dangers. The app can also scan external storage including SD cards and memory sticks, as well as cloud-based tech, and you can set it to scan at regular intervals – from every six hours to every three days. During testing to earn the current Checkmark Mobile Security Certification, the app detected 100 per cent of malware samples, with call blocking for both voice and SMS also meeting West Coast Labs' Performance standards.



Price
Free

Android 2.2 and higher; available from Google Play (Sophos recommends); installation size 17MB; uses 10-12MB RAM; paid-for business version available with additional features

Loss and theft protection

Register the device and if it is lost or stolen use the app to lock, wipe or locate. Configure the app with five trusted numbers from which you can send a text message and kick start security. During testing, remote lock triggered within seven seconds of sending an SMS, remote wipe started after five seconds and took five minutes for a 'secure wipe' to complete (there is a 'quick wipe' setting too). Best of all, within a minute the locate option finds where the device is to an accuracy of five metres via a return text message linked to Google Maps. The app can also remotely force a handset alarm and notify a SIM-card change.

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Stuff

PROJECTS

MAKE. DO. UPGRADE.



p124
**BETA YOURSELF:
SHORT FILMS**

Heed our advice
and you'll be Wes
Anderson, not
Paul Anderson



p127
**5 WAYS TO...
RE-AWESOMISE
YOUR IPAD 1**

Don't give up on
the old girl yet —
she's still brilliant



p134
**INSTANT
UPGRADES:
CITY BREAKS**

Kit to make the
(Ryanair-served)
world your oyster



p137
**IF NOTHING
ELSE, AT
LEAST...**

BBQs, BPMs and
bombing around
StreetView...

BETA
YOURSELF

SHORT FILM MAKING



Short films are today's medium of choice for inventive storytellers. *Stuff's* mini movie mogul Stephen Graves shows us how to direct a taut, honed masterpiece...

BEFORE YOU START

Know what to do and when to do it. A film is born in these stages:

- **pre-production:** scripting, raising funds and planning.
- **production:** shooting the film.
- **post-production:** editing, grading and visual effects.

Take time over your script.

Months, if need be. If your story isn't up to scratch, even the best actors and most expensive cameras in the world won't prevent your film being rubbish.

Decide where you're going.

Draw up a list of accessible locations (home, park, work) and write around them. Even mundane locations can be made interesting with a clever script and some ingenuity – look at films such as *Primer* and *Following*.

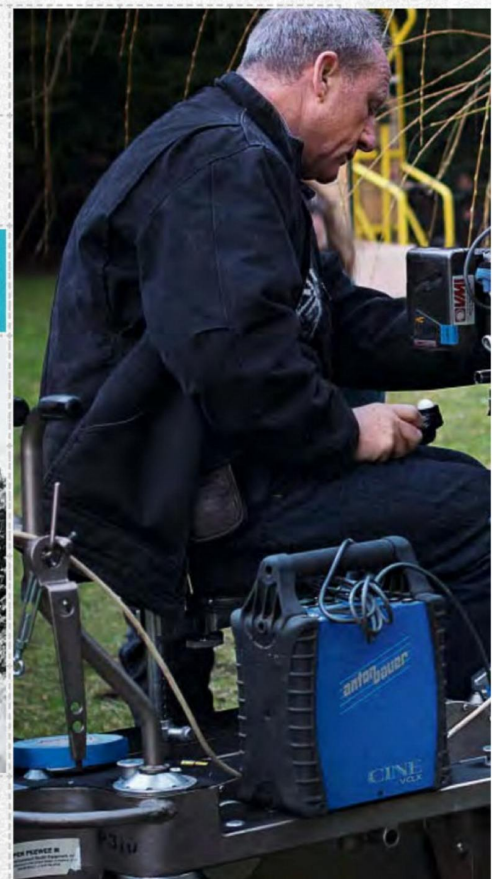
Be resourceful. *Dead Man's*

Shoes director Shane Meadows made a short film with his phone. Dedicated cams are expensive to hire, so ask friends if you can borrow their DSLRs and use cheap but capable editing software such as Lightworks (lwks.com).

Keep spirits high. Film-making is a group effort – discuss characters with your cast beforehand, keep everyone fed and watered, and let everyone know their efforts are appreciated.

Take care of the details.

Meticulous storyboarding and proper budgeting are necessary evils, and remember copyright clearances for visuals and music – otherwise you might not be able to show your film in festivals.



EQUIPMENT

Explore budget options. You may not have a RED Epic, but filmmakers are increasingly using DSLR cameras such as the Canon 5D Mark III. You can even kit out your iPhone with Canon lenses using a handy rig from Phocus (smartphocus.com).

Use what you need. Hiring kit is expensive, so work out what you will actually need for the shots you want to get. A dolly for tracking shots, for instance, or a macro lens for close-ups.

Improvise! Sam Raimi stuck a camera to a plank for tracking shots in *The Evil Dead*, but high-tech, low-cost options abound these days. Check out the Parrot AR Drone 2.0 – it features a Director Mode for sweeping aerial shots.





CREW

Assemble a team. Your core crew members are: a producer to handle the budget; a director to spend it; a cinematographer to light the scene and operate the camera; a sound recorder; and an editor to cut the film.

Network! Need a camera operator or a visual effects artist? Get out there and meet fellow film-makers at festivals, networking events and through websites such as raindance.org and shootingpeople.org.

Don't forget to budget. Hiring kit, getting cast and crew to the location and feeding them all costs money. Robert Rodriguez famously funded his films by participating in medical research; fortunately we now have Kickstarter and Indiegogo.

EXERCISES

Be sure what your film is about. Not just what happens in it, but what message you're trying to convey. For example, *Aliens* may be about aliens, but its themes include motherhood, femininity and America's involvement in Vietnam.

Show, don't tell. Before you start shooting, look for plot and character beats that can be illustrated through visuals rather than dialogue; a shot of a man slipping off his wedding ring before talking to a woman instantly gives you a lot of information about his character.

Embrace your limitations. Work with the resources you have, not those you might be able to get. Got a weird location or prop? Make it the film's hub.

STARTER SKILLS

Use focus and depth of field. Focus determines which part of an image is sharp; depth of field refers to how much of the image is in focus. Draw your audience by altering the focus of the lens during the shot.

Master transitions. Editors use different transitions to cut between shots; fades and dissolves can be used to illustrate the passage of time. Try cutting on motion to add a sense of fluidity.

Don't cross the line! Imagine a line drawn between two characters. Shoot from one side of it, so both actors face opposite sides of the frame when cutting between them. "Crossing the line" breaks the offside rule of film-making.

LEVEL UP WITH...



THE BOOK
INTO THE WOODS
BY JOHN YORKE
£11 / amazon.co.uk
Former Channel 4 head of drama and controller of BBC drama production Yorke sets out to analyse the patterns behind storytelling, explaining why the fundamentals of narrative have remained the same from Aristotle to Aaron Sorkin. A great starting point for anyone wanting to create a story.



THE WEBSITE
SHOOTING PEOPLE
£8/month / shootingpeople.org
A great resource for film-makers, Shooting People hooks you up with cast and crew, serves up monthly film comps for members, and nets you discounts on entry fees to film festivals. It also features lots of resources for film-makers, including a comprehensive events calendar, blogs and a useful Q&A section.



THE FILM
SIDE BY SIDE
£15 / sidebysidethemovie.com
Keanu Reeves' absorbing documentary (yes, seriously) finds the actor canvassing some of Hollywood's top directors — including Martin Scorsese, David Fincher and Christopher Nolan — for their opinions on the shift from film to digital. Its account of how digital has democratised the industry makes for inspirational viewing.

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5

WAYS TO...

RE-AWESOMISE YOUR iPad1



It can't run iOS6 and your friends have started using it as a tea tray. Never fear: **Mark Wilson** has some apps and accessories that'll make your first-gen iPad essential again



1

Turn it into a Windows 8 tablet

Or an OS X Lion iPad, depending on your home computer. Install the free Splashtop Streamer on your Mac or PC, and you can control your desktop remotely on an iPad via the Splashtop 2 app. It even streams audio and video, so you can watch HD films or play games over Wi-Fi or your data connection. **Splashtop 2 / £2.99, iTunes**

2

Make your own mini MET office with it

This weather station's sensors record humidity, air pressure, noise, CO2 levels and real-time temperature both indoors and out, before putting the data into graph form for your iPad. It'll even suggest opening a window when your room's CO2 levels get high. **Netatmo Urban Weather Station / £140, store.apple.com/uk**



3

Record music on it at pro quality

Combine this stereo mic with Garageband, and you've got a mobile recording studio for the price of a battered old acoustic. The Spark Digital sports a 'focus control' button for emphasising higher frequencies, making it nifty for podcasts too. **Blue Spark Digital / £200, store.apple.com/uk; Garageband / £2.99, iTunes**



4

Repurpose it as a studio light

Photographers know how useful a 'soft box' light source is for close-ups. And that's what your iPad becomes with this handy app, which packs a mass of diffusers and useful textures to help shed the right illumination on your subject. Pair it with Photo Soft Box Pro Remote (£0.69) for Bluetooth control. **Photo Soft Box Pro HD / £1.99, iTunes**



5

Bolster your computer's screen estate

Desktop screen more packed than a rush-hour tube? Turn your old iPad into a second screen. Install the Air Display drivers on your Mac or PC, download the app and start whizzing things between screens. If you don't already have an iPad stand, a Breffo Spiderpodium Tablet (£25, breffo.com) will do nicely. **Air Display / £6.99, iTunes**

ALTERNATIVE
GADGET

BEATS vs IN-EAR BRILLIANCE

Thinking of joining the Beats brigade? Stop! Take this less trodden path to commuter audio nirvana (complete with external DAC) and you'll save cash too



£270

BEATS BY DR DRE
STUDIO

Once just a stylish, welcome alternative to Bose's noise-cancelling cans, the original Beats are now a cultural icon. Only Clare Balding got more London 2012 air time than Dre's babies.

£155

SONY XBA-2
+ FIIO E07K ANDES

These sound-isolating earphones (£85) are some of the best. We've paired them with FiiO's portable DAC/headphone amp (£70), which can be fed by USB cable or through a line input.

STYLE & BUILD

■ BEATS

Once modern and fresh, the Studios used to mark you out as a chic sonic connoisseur. Now, particularly in their myriad vibrant colour options, they merely seem to shout I LIKE MUSIC, LOOK HOW COOL I AM.

■ SONY/FIIO

They won't win any design awards, but to anyone who peers closely enough at your earholes, the XBA-2s manage to look reassuringly expensive. The FiiO is classy and solid, but you'll probably have that tucked in a pocket anyway.

SOUND QUALITY

■ BEATS

There's no denying the fullness of bass you get from Beats, nor the 3D soundstage. However, they don't do 'real'. So vocals sound as if they're piped through a megaphone and delicate instruments are blurry.

■ SONY/FIIO

Fed lossless FLACs from a PC (or some Android gadgets via a USB OTG cable), this combo will open your ears to high fidelity. Even connected straight to an iPhone 5 the XBA-2s sound crisply detailed, while still full and bassy when required.

NOISE REDUCTION

■ BEATS

This is where these big Beats really shine, as their built-in noise-cancelling tech copes brilliantly with a variety of situations. The only bummer is that they die completely if the batteries run down.

■ SONY/FIIO

Once you find the earbuds that fit best from the supplied assortment, these sound isolators valiantly block out surrounding hum and chatter. They're not so effective at real extremes, so frequent flyers may not be impressed.

STUFF SAYS

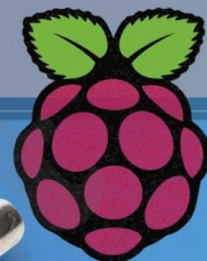
The Beats still have skills, but real music fans should treat their ear canals to the truer sonics and superior versatility of the Sony/FiiO combo

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What is a Raspberry Pi®?

It's a credit card sized computer that uses your television or monitor via the HDMI port, so you can use it like a desktop computer to browse the web, play HD video or build a media centre. But what it is really designed for is computer programming, the OS includes Python and Scratch which allow users to learn and improve their programming skills. The board has I/O connector pins that can be connected to a variety of electronic modules, sensors, motors or other control systems and uses software to perform everyday tasks, creating hours of fun.

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Home Automation..
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HOW TO BUILD THE ULTIMATE TECH HOME



PART 1



PART 2



PART 3



PART 4



PART 5

STORE SMARTER

Your movies, music and photos in any room, at any time, and safely backed up: that's the dream. Now read this and make it reality



Scenario #1

You want music minus the humming boxes

Don't fancy an always-on PC or NAS eating your leccy? **Amazon Cloud Player** (1) is just the thing: it stores and streams your music, or matches it with its own database. Up to 250 tracks for free, or 250,000 for £22/year, and it works with any web browser as well as iPhone, Android, Kindle Fire and Sonos devices. Anything you've bought through Amazon is stored for free, natch. The downsides? No broadband, no music, and quality is restricted to 256kbps MP3. Plus, the service is for music only; Amazon still directs you to its Lovefilm service for films.

Scenario #2

You want all of your stuff, all of the time

Want to stream DVD rips, music, and share files all over your pad? Network Attached Storage (NAS) is your friend. Our pick is the (2) **Synology DS213J** (from £165 synology.com), a smart box that connects one or two hard drives – up to 8TB total – into your router. Lossless music and 1080p video can be sent to AV gear around the house via UPnP, or over the net to mobile devices. Its DS cloud app even turns it into a Dropbox clone. Plus, it offers 'resilient' PC, Mac and Linux backup: you can set the second hard disk to 'mirror' the first, saving you if one fails.

Scenario #3

You want serious streaming power

A DIY storage system is an affordable way of keeping and streaming loads of HD media. Start with some basic PC hardware then choose from a world of free NAS OSes. Simplest is Vortexbox: load it on to an old PC, and it'll auto-rip CDs and DVDs and serve 'em up on demand. OpenMediaVault is more powerful, adding improved NAS capabilities, while tweekers will love the media-centric UnRaid and pro-level FreeNAS. Us? We'd kill two birds with one simple stone: set up right, **Windows 8** can serve, backup and play your media... See facing page for that.



1TB

David Bailey

Will store up to 200,000 16MP JPEG photos, or 40,000 lossless RAW images. Your tunes and documents will fit, too.

2TB

Rick Rubin

Lossless FLAC files will find this space good for 8000 albums. The new lossless HD audio formats? You'll get 2000 albums on here.

4TB

Edgar Wright

Budding indie movie-makers will fit all 800 of their DVD movies at lossless MKV quality on this amount of disk space.

8TB

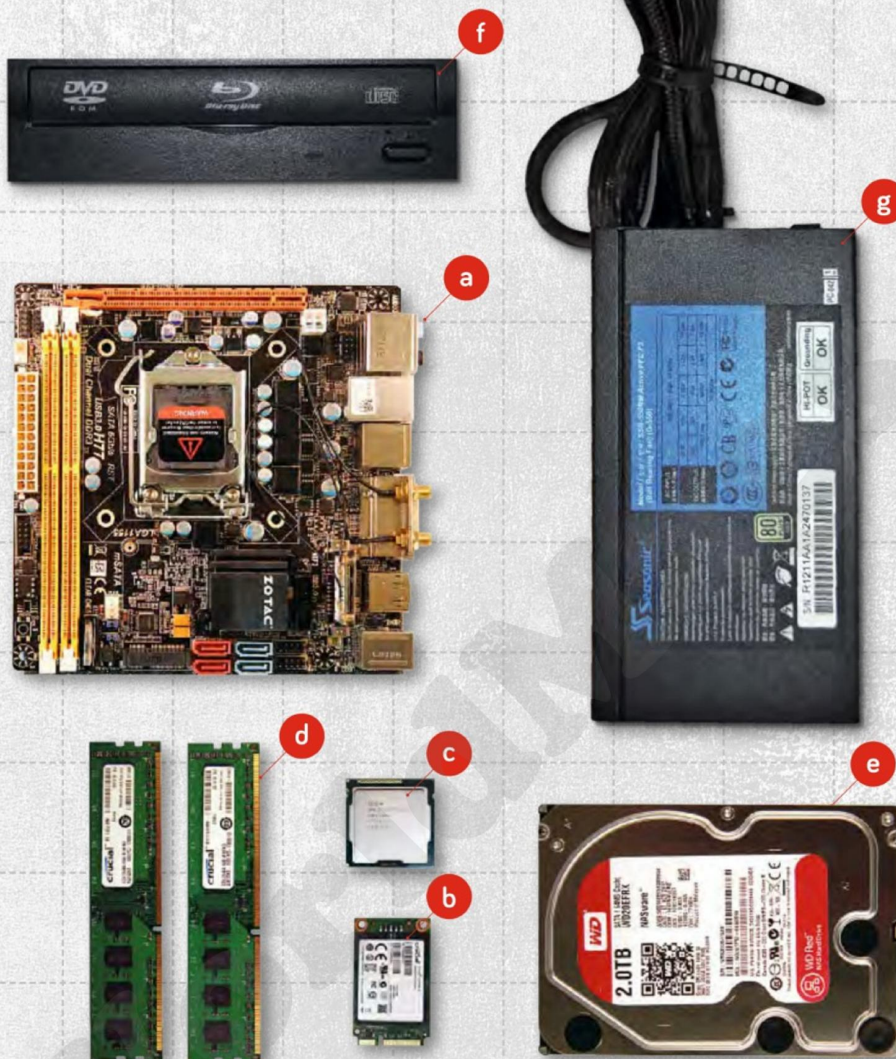
Steven Spielberg

Blu-ray movies are big – you'll get 'just' 320 lossless 1080p MKV movies on 8TB. Or, of course, 1600 DVDs. Which is probably enough.



HOW TO... BUILD A KILLER MEDIA-SERVING PC

No need to dust off that old PC, nor buy an expensive new one. Here are the ingredients for your very own compact, efficient, capacious media server and player...



THE HARDWARE

The system will be housed in a **Lian-Li PC-Q28** (3, £100, lian-li.com). It fits up to six 3.5in hard disks for up to 24TB (!), all in a well-ventilated aluminium box half the size of a tower PC. Our motherboard is the tiny **Zotac H77-ITX-A-E** (a, £80, zotac.com), which has five SATA ports for hard disks and optical drives, and packs a mini-SATA port for an SSD. We've used a **64GB Crucial m4** (b, £65, crucial.com), which is affordable, nippy and has sufficient space for the OS and media software. Using it means popping out Zotac's Wi-Fi card, but you should always connect a server to your network via Ethernet anyway.

The processor is an **Intel Core i3-3220t** (c, £100, intel.com), a low-energy dual-core model with HDMI 1.4a-ready graphics tailored to media playback and 'Quick Sync' tech for fast video encoding. A cheaper Celeron chip would do if your server is just for use around the house. We also have 8GB of **Crucial DDR3 RAM** (d, £55, crucial.com) to keep it all running smoothly.

We're starting out with two 2TB **Western Digital Red** hard disks for storage (e, £85 each, wd.com), specially designed for the rigours of always-on media streaming and guaranteed for three years. Disc spinning and ripping comes via a (f) **Lite-on Blu-ray** drive (£30, liteonit.eu) and powering everything is the ultra-efficient (g) **Seasonic G-Series 550W** (£85, seasonic.com), which is guaranteed for five years. Neat setup, huh?

TOTAL: £685 + £130 software

**NEXT MONTH
HOW TO RIP
EVERYTHING**

THE SOFTWARE

Windows 8 Pro (£110, windows.com) is our chosen OS: easy to set up, has the best media software, remote desktop capability and it's a trusty looker-after-of-things. One new feature, Storage Spaces, allows you to mirror data so that it's spread across (fallible) physical disks. That said, we'd suggest adding **Stablebit**

DrivePool (US\$20, stablebit.com). It's like Storage Spaces but uses universal PC drive structures, as well as levelling up read/write speeds for ripping and streaming.

Windows Media Center is a fine UPnP server, but **Plex Media Server** (plex.com) is better, and it'll transcode files so that they'll play on whatever you want to stream to. And it's free. Win.

The **CrashPlan** backup app (crashplan.com) is also free, and enables you to back up your server's contents to a friend's PC across the web for nowt. Or, for US\$4/month, to CrashPlan's own cloud servers. Load it on the Windows, Mac and Linux PCs you want backed up to your server and it'll make that process a cinch, too. Finally, the free

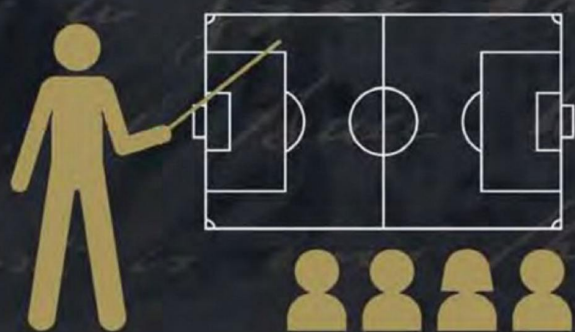


SkyDrive app (windows.com) will let you access your files from any browser, anywhere, via its 'Fetch' feature. Double neat.

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MAIL OF THE MONTH

Q TREES-Y DOES IT

I'm a tree surgeon and often find myself up high, with a heavy chainsaw in one hand and a branch in the other, when my mobile rings. I've tried using bluetooth headsets but I can't wear one with a hard hat. What I really need is a device to fit my iPhone 4 to my arm that I can operate like Predator. I have

seen some smart watches but the 'smart' side of things didn't get a very favourable write up. What do you suggest?

Graham Talbot

A Until Apple or Samsung launches their smartwatch things on that front are unlikely to change, but something like Incase's Sports Armband Deluxe (£35,

apple.com) might solve the problem in the short term. It won't fire lasers but unlike a lot of armbands it keeps the microphone and speaker exposed so you can still take calls handsfree. The case can also be detached if you find yourself on terra firma when it rings. Now get down from there and have this Roku streamer.

Speak your brains at us and you could win a **Roku 2 XS** streamer worth £100



Q TWO BECOME ONE

I have two very basic mobile phones that I carry with me at all times; one is a company phone and the other is personal. Is there one handset – ideally an iPhone, Galaxy S4 or HTC One – that I can put both SIM cards in and it'll ring when either one is called? My budget is about £700.

David Scurry
A If only you lived in China – then you could get a dual-SIM S4. Over here, if you pick up an iPhone 4S (£450, apple.com), you can get a Dual SIM Case (£30, www.find-me-a-gift.co.uk) that allows you to install two and choose between them using a switch on the back. They won't be active at the same time, but if you want a decent phone, that's a sacrifice you'll have to make.

Q GNARLOGRAPHY

I've recently started snorkelling and skydiving and I'm looking for a camera that can capture the ups and downs of both but also serve as my everyday snapper. I don't want to spend more than £230...

Fabrizio De Venere

A For video, Fabo, we'd pick Panasonic's FT5 but, at around £300 online, it's a bit over your budget. You should be able to get the recently replaced Nikon AW100 (left) for nearer £200, which is waterproof to about 30 feet. Team it with a Properta Camera Demon (£25, properta.co.uk) and it'll attach to a helmet for the rough stuff.

Q WIN-D'OHS MEDIA

I have an Onkyo amplifier that accepts streamed music from my phone, iPad and Galaxy Tab using the Onkyo Remote app. However, it seems that grumpy old Windows Media Player is a little reticent about joining in the wireless fun. Is there an alternative app I can use to stream files from my PC?

Julian Price

A Well, JP, anything that supports DLNA 1.5 streaming should work, so you could give XBMC (Efree, xbmc.org) a bash. It's an open-source media player for Windows, Mac OS and Linux that has plenty of fans here at Stuff Towers, plus there's a remote app available for Android and iOS.

Q FREQUENT FLYER

I spend hours at airports waiting for connections, usually with as little luggage as possible, but I always carry a laptop. I need to replace my old Toshiba with something slim and light that I can connect to a projector. I don't need a full desktop replacement but I'm not sure a tablet is worth the money. Could you suggest anything else?

Konrad Wdowiak

A Sounds like Acer's Aspire S7 (£1000, acer.co.uk) is the one for you, K-Rad. It's skinnier than a MacBook Air and has an HDMI port to hook it up to a projector. But its 1920x1080 touchscreen folds right back so you could use it instead of a projector for small groups.

Q SPEAKEASY

Computer speakers are getting bigger, better, and more expensive. I need a speaker solution to go with my new Mac Mini that won't break the bank, bring the house down, or worst of all, wake the children. They should be small, stylish and cost less than £100.

Chris Fetherston

A On that budget, Fethers, you won't get anything child-bothering but Otone's Afineo (£80, otoneaudio.co.uk) stereo speakers are worth a butcher's. Flakey touch-sensitive buttons aside, you'll find enough oomph to fill a room. If you want better looks you'll have to pay for a pair of Frankenspiel FS-1s (£130, soundscience-corp.com).



6 INSTANT UPGRADES CITY BREAKS

As Time and Money fight to be King of Things You Don't Have, urban weekends are the new two-weeks-in-Tonga. Savour every second with these short hop essentials...



[Words Mark Wilson Illustration Jamie Sneddon]



1 LOGITECH UE 4000

With luggage space at a premium, you'll want something a little more discreet than a bulky, £300 pair of noise-cancelling headphones. These stylish on-ear cans come in a handy zippered pouch and are ideal for small doses of most music types, thanks to the warm mid-tone reproduction and deep bass. Comfy leather ear cushions keep your shell-likes happy, while sound isolation is on hand to help take the edge off engine noise, city bustle and that important departure announcement. Oops...

£80 / ue.logitech.com



2 INCASE HARDSHELL ROLLER

Globetrotting geeks need versatile, gadget-friendly luggage. This sharp-looking, wheeled case has a dedicated tech compartment – protected by a natty polycarbonate cover and located on the top for easy access going through airport security. Inside it there's a padded sleeve for anything up to a 17in laptop, plus an iPad pocket and stowage for your cables and chargers. The main compartment expands from 31 to 40 litres and the bright yellow wheels are... well, pretty.

US\$300 / goincase.com



3 AIRSTASH

Ah, iPads – such lovely Retina displays, so lacking in format support and expandable storage. This clever stick solves all that. Ignore the fact that it looks like a USB pen drive – it's actually a stand-alone, battery-powered Wi-Fi server. Stick an SD card in it from your camera, or load one up with music and movies, and you can access it all wirelessly from your iPad, or up to seven other devices. It works with format-friendly video players such as the free Ace Player, lasts for up to seven hours and charges via that USB connector.

£80 / airstash.com



4 INNERVIE POCKETCELL DUO

City breaks are stressful for gadgets. To keep their energy pepped while you're out gawping at buildings, stick this in your pocket. USB chargers are nothing new, but this 133g marvel packs in a remarkable 6800mAh battery – capacity enough to re-juice an iPhone 5 four times. It has two USB sockets, so can charge two gadgets at once, and comes with a three-in-one cable – miniUSB, microUSB, and Apple 30-pin. Don't worry, it'll also work with a Lightning cable.

£100 / myinnervie.com



5 PANASONIC DMC-TZ40

Smartphone cameras are like a weekend in Milton Keynes compared to the skyscraping grandeur of dedicated snappers. The latest of Panasonic's travel-orientated TZ-series brings a 24mm, 20x optical zoom lens, GPS, image stabilisation and a full range of manual controls for you to exercise your creative flair. Does it have Instagram? No. But 14 creative filters, built-in Wi-Fi and NFC for tapping shots on to your smartphone or tablet will make sure you're revered as the Don McCullin of holiday photos on your return.

£300 / panasonic.co.uk

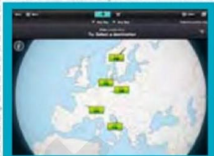


6 HIPKEY

Having ignored our advice (left) about getting a camera, you've now lost your phone... and all your photos. Oh, the memories! Those sordid, career-ending shots of you in the city's murky corners! Avert such disaster with this little Bluetooth widget, which emits a 90 decibel bleep when your phone goes beyond your preset distance – up to Bluetooth's 10m range, of course. You can also attach the HipKey to your rucksack/child/popcorn and your iPhone will alert you to them moving outside your zone or, if you like, moving at all.

£70 / store.apple.com/uk

HOW TO... TECH UP YOUR TRAVELS



1 CHEAPIFY YOUR FLIGHTS

Kayak.co.uk is fine for desk-based planning, but our usual knee-jerk flight bookings app is Skyscanner (£free, iOS, Android, Windows 8). In the midst of a pub-based, drink-fuelled holiday planning session, it calmly gathers flight options in a pleasing graph form before linking you to the booking site where regrets are made.

2 FIND THE SEAT OF POWER

Smooth the ends of your city break by researching the seats on your plane. The recently updated app SeatGuru (£free, iOS and Android) has a vast library of airlines' aircraft and their seating foibles, colour-coded by desirability. Just enter your flight number for an insider's guide to happy airtime. Well, hopefully: it can't tell you where the screaming babies will be.

3 MEET THE LOCALS

Use Vayable (vayable.com) to scout your chosen city's best guided tours. With a database of more than 500 cities and thousands of official guides, it has everything from bike tours to bongo lessons to hummus crawls. Even if you don't book through Vayable, it's a fine way to get a taste of your city's cultural treats and get in the mood on the bus from the airport.

4 GET POST-HOLIDAY KARMA

Website and app Gogobot (£free, iOS and Android) is both a hive mind of crowd-sourced travel knowledge and a place to stake your claim as an Earth expert. Submit reviews and, if other users vote up your musings, you'll climb the rankings. There's no prize, other than the warm glow of being the Judith Chalmers of the Internet.



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5-MINUTE HACKS

IF NOTHING ELSE, AT LEAST...

...MAKE A HYPERLAPSE

Hyperlapse videos are time-lapses that swap a fixed viewpoint for sweeping camera movements. They usually involve taking hundreds of still photos, but not when you hack Google Street View:

- **Go to hyperlapse.tl labs.io** and click 'create your own'. Type in the place or postcode that you want to hyperlapse, or click 'featured' for good examples.
- **Choose start and end points** by moving the 'A' and 'B' on the Google Map. Long, straight roads and bridges work best, unless you like feeling car-sick.
- **Move the cursor to decide** your default viewpoint and hit 'create'. If you're handy with coding and fancy fiddling with frame rates – and who doesn't? – head to the Github link in 'learn more about this project'.

...RUN TO A BETTER BEAT

Smartphones love to throw eight-minute thrash-metal songs into your running warm down. Here's how to sync your mobile with your 'relaxed' pace:

- **Download** Cruise Control: Run (iOS, £3), or PaceDJ (Android, £0.69). Now decide on a target 'beats per minute' rate. A decent workout should be between 120–140 BPM.
- **Enter this BPM** into the 'heart rate' mode in either app's main screen. Both calculate the BPMs of your locally stored tunes and match them to your chosen or current pace.
- **Run out of running music?** Look for suggestions at jog.fm, which gives each song a BPM and a running pace. To work out BPMs for music on your PC, use Cadence Desktop Pro (from £2.50, Mac and Windows).



...COOK PERFECT BARBECUE RIBS

As The Supremes once sang, you can't hurry succulent barbecue ribs. But, says Richard Holden from the Weber Grill Academy (grillacademy.co.uk), a little patience and a sprinkling of tech will go a long way:

- **For maximum flavour,** remove the membrane from the back of the ribs and season with a dry rub of salt, pepper, brown sugar, garlic powder and paprika. Leave overnight.
- **Set up your barbecue for 150°C** indirect heating (or roasting). Cook them uncovered for one hour, then wrap them in foil and cook for another 90 minutes. Remove the foil, and cook for a final 30 minutes.
- **Towards the end of cooking** use a temperature probe at the deepest part. You're looking for an internal temperature of 91°C.



TUNE IN NEXT MONTH FOR...

- The *Stuff* Home Project: How to properly rip all of your media
- Everything you need to know about indie gaming
- How to DJ like a pro



Download *Stuff*'s iOS app for our own hyperlapse and other interactive goodies

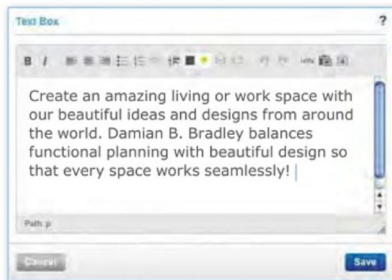
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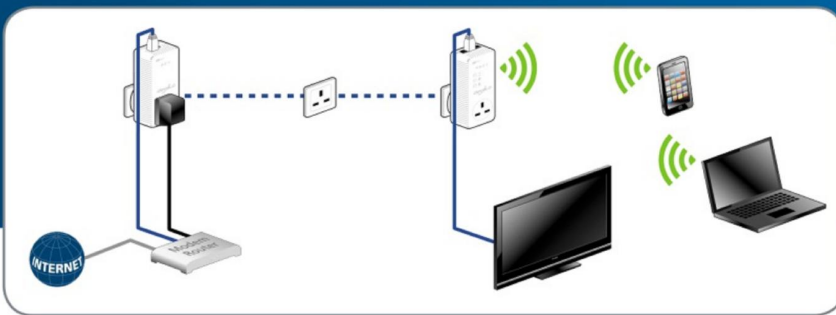
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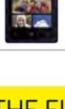
[PC World](http://PCWorld.com)

Stuff

TOP TEN

OF EVERYTHING

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HOT BUY UPDATE	1		HTC One Well, look at the handsome HTC, still heading up this Top 10 in the wake of our Supertest (p82) pitting it against the Xperia Z and Samsung's hotly anticipated Galaxy S4. The One is a masterclass in smartphone craft, from its impossibly clear 1080p screen to its strokable aluminium body, clever Sense 5 skin and UltraPixel camera. The S4 might be better for power users, and the Xperia Z for mobile movie buffs, but the One finally drags HTC out from under the also-rans.	STUFF SAYS Super-stylish, ultra-smart and a pleasure to use, the HTC One is a masterclass in smartphone design £525 ★★★★★
NEW	2		Samsung Galaxy S4 The S4 is like a Deep Fill sandwich of tech: a 5in 1080p screen, 13MP camera, 4G and quick quad-core processor. But once the novelty of tasty fillings such as Air Gestures and Smart Scroll wear off, you'll long for the handmade panini taste of the HTC One.	£480 ★★★★★ BEST FOR FEATURE FANS
UPDATE	3		Sony Xperia Z You've got to feel for the Xperia Z – just a few months in the game and it's been demoted twice. Still, while it narrowly loses out to both Samsung and HTC this month, Sony's water-resistant flagship remains a gorgeously monolithic slab of a phone.	£405 ★★★★★ BEST FOR WATCHING FILMS IN THE BATH
	4		Google Nexus 4 Our champion 'budget smartphone' is finally in stock on Google Play. The Nexus 4 represents astonishing value: it runs vanilla Jelly Bean, packs a lovely 320ppi screen and is getting more accessories than almost any other Android smartphone	£250 ★★★★★ BEST FOR POWER AND PRICE TAG
	5		Apple iPhone 5 It's got the best app store, the subtlest design and continues to offer the smoothest smartphone experience out there, but iOS looks increasingly dated next to Android and the technical superiority of flagship rivals means the iPhone 5 is no longer top dog.	£530 ★★★★★ BEST FOR UNPARALLELED APP CHOICE
UPDATE	6		Samsung Galaxy Note II Its 5.5in 720p screen might be too much for most of us to get to grips with but the Note II's supreme power, handy S Pen stylus and features such as Popup Browser and Multiscreen are pretty useful. The 4G-ready N7105 model costs roughly £400.	£360 ★★★★★ BEST FOR BIG-HANDED CREATIVES
NEW	7		BlackBerry Q10 BlackBerry's Z10 may have initially grabbed the headlines, but it's the Q10 the QWERTY faithful have been waiting for. They won't be disappointed: the combination of great little screen, lovely big keyboard and lots of grunt makes it a productivity powerhouse.	£530 ★★★★★ BEST FOR WORKAHOLICS
	8		Nokia Lumia 920 It's a photo finish, but Nokia's flagship edges out HTC's 8X as our favourite Win 8 phone. They share the same dual-core processor, but the 920's superior 4.5in screen and battery give it this victory. But it needs more apps to take on Android and iOS.	£325 ★★★★★ BEST FOR WINDOWS PHONE 8
	9		Huawei Ascend P1 The P1's successor, the cleverly-named P2, will be arriving in summer 2013 for a SIM-free price of €399 (UK price £tba). It'll pack a larger 4.7in screen, 16GB storage and the potential for extra-fast 4G speeds thanks to a Category 4 LTE chip. Review soon.	£290 ★★★★★
	10		HTC 8X The 8X takes the title of 'world's best-looking phone' and positively glows in its blue, red and yellow hues – as does its gorgeous 4.3in, sharper-than-Retina LCD display. The dual-core chip performs well too, but a thin apps catalogue loses it a crucial star.	£350 ★★★★★ BEST FOR PURE AESTHETICS

● Prices quoted are for handset only unless otherwise stated

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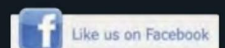
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HOT BUY	1		Apple iPad The 4th-gen iPad still stands above all tablets, with an amazing screen that renders everything in glorious 2048x1536 on its 9.7in Retina display. Photos, games and movies look incredible and text is eggshell-smooth. The A6X chip's quad-core graphics and the LTE browsing speeds (EE only) make it slicker and more user-friendly than ever, while the unparalleled riches of the App Store mean it's still the most fun, too. That said, we're looking forward to an iOS refresh.	STUFF SAYS Does everything the iPad has ever done, but now it's twice as fast and four times as pretty. Amazing from £385 ★★★★★
NEW	2		Asus FonePad Shut the front door! Where's the Nexus 7 gone? Fickle as ever, we've decided we like this DNA-sharing FonePad more. Same size and 7in screen as the Nexus, but comes with Intel inside, 3G and a microSD slot for just £20 more. Not as classy, mind you.	£180 ★★★★★ BEST FOR VALUE AND PERFORMANCE
	3		Apple iPad Mini A stunning finish makes this the prettiest Apple tablet yet. The 7.9in screen shares the iPad 2's 1024x768 res, but it's not as crisp as the Nexus 7 or Kindle Fire HD. Great apps offset that loss – but at £100 more than the FonePad, it's hard to recommend to all.	from £280 ★★★★★
	4		Asus Transformer Pad Infinity Don't underestimate the keyboard dock. The Infinity uses it not just for its trackpad and keys, but also for connections and extra battery life. Along with quad-core power, it makes this full-HD-screener a netbook beater. The £485 Prime is also excellent.	£505 (w/keyboard dock) ★★★★★
	5		Google Nexus 10 It doesn't feel quite as premium as the iPad, but the Nexus 10's 2560x1600, 300ppi screen is the sharpest we've seen on an Android tablet. With a dual-core 1.7GHz chip, solid battery life and speedy MIMO Wi-Fi, this Jelly Bean slate is a solid contender.	from £320 ★★★★★ BEST FOR MOVIE-FIEND ANDROID FANS
	6		Lenovo ThinkPad Tablet 2 You're a high flyer. You have work to do and neither iOS or Android has the oomph. You need the Windows 8 Pro-running Tablet 2. It lasts all day, is powerful enough for full-fat desktop software and with the £80 keyboard dock it's an ultraportable laptop.	from £455 ★★★★★☆ BEST FOR DESKTOP VERSATILITY
UPDATE	7		Samsung Galaxy Note 8.0 Whether you think it a biggerised Note II or a shrinkified Note 10.1 – and with phone functionality, it's more of the former – the Note 8.0 is a peculiar gadget. Pricier than an iPad Mini in both Wi-Fi and 3G models, yet has that handy pen input. A marmite tab.	from £360 ★★★★★☆
	8		Sony Xperia Tablet S Sexier, faster and skinnier than the Tablet S before it, this 1280x800 quad-core slate has a magazine-style fold for easy gripping. At 570g the solid aluminium build is lighter than the iPad, and DLNA skills and an IR blaster make it a top living-room slate.	from £265 ★★★★★☆ BEST FOR AT-HOME AV CONNECTIVITY
	9		Microsoft Surface with Windows RT The pared-down Win RT hits the funky, chunky 10.6in Surface. Its 16:9 screen is a mere 1366x768 but images look good, graphics are smooth and battery life is excellent, as are the Touch and Type keyboard covers. A lack of apps limits it for now.	from £420 ★★★★★☆
	10		Amazon Kindle Fire HD Forgetting that big bezel, the Fire HD's 7in, 1280x800 screen packs a punch. It's also fast and has great speakers, making it a great tablet for films, ebooks and media consumption, so long as you don't mind the lack of apps and closed Amazon ecosystem.	from £160 ★★★★★☆ BEST FOR ON-THE-GO BUSINESS

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HOT BUY 1		Sonos multiroom system Who needs to drill holes and re-plaster walls to get a multiroom music system? Not you. With Sonos, you can expand your set-up at your leisure – why not start with a budget Play:3, and add a bigger Play:5 later? Then maybe hook up a Connect to your existing hi-fi and router, then add speakers to a Connect:Amp in another room, or a SUB for a bass boost. You'll run out of rooms before you run out of options. For a further upgrade, the Arcam rSeries SonLink DAC works a treat with the Connect.	STUFF SAYS Infinite music in every room without the need for custom installers? Sign us up now, please from £500 ★★★★★
2		Cambridge Audio Stream Magic 6 Our favourite music streamer is only kept from the top spot by the brilliant flexibility of the full Sonos system; as a single player, we'd go for this every time. Team it with the Azur 651A amp (£350), feed it high-resolution 24-bit tunes and you'll never look back.	£600 ★★★★★
3		Naim Uniti 2 The new Naim is the best streamer we've heard – feed it music by USB, Wi-Fi, or CD, and it'll pay you back with a sound that's breathtaking in its clarity and precision. It's not cheap and lacks streaming services, but as soon as you hear it you won't care.	£2795 ★★★★★ BEST FOR TOP SOUND QUALITY
NEW 4		Bowers & Wilkins Z2 The baby of B&W's AirPlay range is a little belter, and it adds a proper Lightning dock to Apple's wireless tech. It'll easily fill a small to medium-sized room with chunky bass, punchy beats and lovely, clear vocals. You'll buy it for the look, but love it for the sound.	£330 ★★★★★
5		Denon CEOL Piccolo A diminutive standard-bearer for next-gen micro hi-fi, the Denon's got Spotify, a control app, and it'll stream your own tunes, right up to 24-bit. The dock's 30-pin, but who cares when you've also got AirPlay? Add Q Acoustics 2020i speakers for awesome sound.	£250 ★★★★★ BEST FOR VERSATILITY AND VALUE
6		Libratone Zipp A fuzzy, cylindrical, colourful AirPlay dock that will deliver detailed, punchy 360-degree sound anywhere at all, thanks to a built-in battery that gives it four hours of outdoors life. Direct Wi-Fi skills free you from cables, routers, and everything but the boogie.	£330 ★★★★★ BEST FOR AL FRESCO PARTIES
7		Philips Fidelio SoundSphere DS9800W In a world awash with AirPlay-equipped docks, the SoundSpheres have created a niche for themselves by offering proper two-channel stereo output. Idiosyncratic looks ensure they'll stand out even further from the crowd, and they sound great too.	£450 ★★★★★
NEW 8		Cambridge Audio Minx Air 200 It may not immediately attract the eye, but the Minx Air 200 certainly attracts the ear, especially when chucking out tunes at maximum volume, which is very loud indeed. With Bluetooth, AirPlay, RCA and aux-in, it's a crowd-pleaser with its connections, too.	£430 ★★★★★
NEW 9		Sony SRS-BTM8 Forget that this Sony looks uncomfortably like a handbag because it's actually one of the biggest bargains in hi-fi right now. Pop in four AA batteries (old-school, right?) and it will power a party in the park. It's got fancy NFC, too, but the best thing is that it sounds ace.	£60 ★★★★★ BEST FOR BARGAINOUS BLUETOOTH
10		Focal XS Book Can a computer ever be a proper hi-fi substitute? It can if kitted out with these premium 40W desktop speakers. If the new wireless version – due out this May – doesn't interest you, you might well see a nice price drop on this existing model.	£250 ★★★★★ BEST FOR A DESKTOP HI-FI UPGRADE

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STUFF PICK NEW MUSIC



Neon Neon – Praxis Makes Perfect

In which Gruff 'Super Furry Animals' Rhys teams up with producer Boom Bip for a concept album about activist and publisher Giangiacomo Feltrinelli. So, standard X-Factor fare. But while the idea might be offbeat, the sounds are pure, '80s-tinged pop brilliance.

★★★★★



The National – Trouble Will Find Me

The National have never really pulsed with the joys of spring, but their sixth album is maudlin even by their own standards. That's not to say it's bad – far from it – but the odd change of pace of the kind that enlivened 2010's *High Violet* would've been nice. One for devotees.

★★★★★



The Computers – Love Triangles Hate Squares

Sadly not an actual band of computers, who rehearse in an internet garage, and tour the Ethernet. Instead, they're a laid-back, soulful, hooky rock'n'roll band with a sound that's perfectly suited to summertime hangs, coke floats and sunglasses.

★★★★★



Savages – Silence Yourself

This Anglo-French quartet are too young to have lived through the late '70s, but their wonderful debut is as close as you'll get to time travel right now. It's spiky of guitar, lyrically intense and easily one of the best debuts of the decade so far. Crikey.

★★★★★

HOT BUY 1		Phonak Audéo PFE 012 It's not easy creating the perfect headphones. Music is so subjective that one human's perfect sound is lacking in bass for another, and too bright for pedant number three. The PFE 012s do about as good a job of satisfying disparate tastes as any in-ears we've tried. They dig up bags of detail and deliver sweet vocals along with a palpable soundstage. You'll need to move fast though, as they're soon to be discontinued. We're listening out for a worthy replacement.	STUFF SAYS Fantastic sound, noise blocking and comfort at an excellent price. The perfect PMP upgrade £75 ★★★★★
2		Bowers & Wilkins P3 Superb sound and a solid and achingly stylish design make these the best portable on-ears around. The fact that two cables come in the box – one with a mic and remote for iPhones, one without – only sweetens the already candy floss-like deal.	£170 ★★★★★ BEST FOR ON-EAR EXCELLENCE
3		SoundMagic E10 Look closely at the picture and you might notice a little weave in the E10's cable. Yes, these budget belters were tweaked a while back to make their cable more durable. They sound better than they did too – good enough for the bronze-medal spot.	£35 ★★★★★
4		Sony XBA-4iP These chunky in-ears have four drivers pumping exceptionally punchy, detailed sound into your gloriously spoilt lugholes, but despite the fairly hefty design they're surprisingly comfortable, too. They were £400 at launch, so £250 is a great deal.	£250 ★★★★★ BEST FOR IN-EAR EXCELLENCE
5		Sennheiser MM 450-X With hi-fi quality aptX Bluetooth, noise-cancelling, great sound and a mic for use with smartphones, the awesomely portable MM 450-X cans might be the only pair of headphones you ever need. Now we're just hoping the next iPhone has aptX built in.	£180 ★★★★★ BEST FOR GREAT SOUND WITH NO WIRES
6		Klipsch Image X10i A perennial favourite at Stuff Towers, these tiny, mic-toting buds sound superb and are more comfortable than they look. They launched at £230, so are something of a bargain now. Even the Lou Reed Signature Editions are now available for around £140.	£135 ★★★★★
7		PSB M4U2 Yes, the M4U2s have got great noise-cancelling, but that's only half the story. Using the built-in amp produces a sound that's almost unbelievably punchy, clean and exciting. They might be a bit heavy, but that audio quality really is worth the weight.	£270 ★★★★★ BEST FOR SHUTTING OUT THE WORLD
8		Sennheiser Momentum Classily styled, cushion-comfortable and smooth-sounding, the Momentums are the perfect pair of on-ears for the dapper man about town. There's no noise-cancellation, but they do isolate nicely. While they don't fold down, a neat case is included.	£260 ★★★★★ BEST FOR QUALITY AND STYLE IN ONE
9		Grado iGrado These have been around a while now, but not long with their new driver, which makes them better than ever. Detail, punch and superb tonal balance are the selling points, but they're open-backed, so commuters beware – you'll be leaking sound all over the bus.	£45 ★★★★★
10		Sennheiser CX 680i Light, sweat-resistant and with a clever 'EarFin' to keep them in place, the CX 680i in-ears are the perfect partner for sporty music lovers. They sound impressive, too, and have an in-line mic. Try the PMX 680is (£50) if you'd prefer a neckband design.	£40 ★★★★★ BEST FOR TUNE-LOVING FITNESS FANS

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STUFF PICK NEW BLU-RAY



The Last Stand

Arnie's first solo picture since quitting politics sees him cast against type as a college professor grappling with terminal illness... nope, of course not. He plays a small-town sheriff battling a drugs cartel in this undemanding action yarn. He's still a master of the clunky one-liner, though.

★★★★☆



Wreck-It Ralph

A video game bad guy gets sick of his job and decides to escape to another one. Cue appearances from scores of evil gaming greats – Clyde the Pac-Man ghost, M. Bison, Dr Robotnik, Bowser – and a charming storyline that will warm the heart of grizzled old gamers everywhere.

★★★★★



Django Unchained

A Western unlike any we've seen before, *Django Unchained* sees Quentin Tarantino tackle slavery in his usual restrained manner. The dialogue is superb, the violence cartoon-colourful and the acting – in particular Leo DiCaprio – excellent. It's not quite *Inglourious Basterds* – brilliant, but then what is?

★★★★★



A Good Day to Die Hard (Harder Extended Cut)

Bruce Willis looks bored throughout the fifth *Die Hard* movie, and so will you. This special edition sees people die a little harder, but otherwise it's the same old mix of gunfire and explosions we know so well. So, RIP *Die Hard*: we'll always have Nakatomi Plaza.

★★★☆☆

BLU-RAY PLAYERS

HOT BUY	1		Sony BDP-S790 A quite remarkable device, this Sony sounds great, has a wonderful picture in 2D or 3D and is crammed with on-demand content including Sony's own Movies Unlimited. Its trump card is 4K video upscaling; you may not need it yet, but you soon will.	£185 ★★★★★	BEST FOR ON-DEMAND FILMS
	2		Panasonic DMP-BDT220 It's not the most extravagantly specified Blu-ray player around (though Panasonic's remote-control app is a joy), but the BDT-220 has the sort of picture- and sound quality to make its price look like a misprint. And that's our favourite kind of mistake.	£130 ★★★★★	BEST FOR BLU-RAY ON A BUDGET
	3		Marantz UD7007 Pricey like an Aston Martin is pricey and about as satisfying to own, this Marantz can play any disc you like, streams music at high-def resolutions and can withstand an earthquake. If you really, really take movies and music seriously, this is your player.	£630 ★★★★★	BEST FOR THE ULTIMATE IN QUALITY

SPEAKER SYSTEMS

HOT BUY	1		Sony BDV-N590 The biggest bargain in home cinema, the Blu-ray -packing N590 has a massive spec but a micro price. Picture and sound are excellent, Sony's smart services are immense and its stylish curves and touch-sensitive controls add a dash of premium quality.	£300 ★★★★★	BEST FOR AWESOME ALL- IN-ONE VALUE
	2		Sonos Playbar A characteristically Sonos take on the soundbar, the Playbar hooks up to your TV via its single optical input and fills your room with a big, detailed sound. And as with all Sonos kit, it can stream your own music files, Spotify and more wirelessly around the house.	£600 ★★★★★	BEST FOR ALL-YOU-CAN STREAM MUSIC
	3		Yamaha YSP-3300 If you've got more money than space, send your butler out now for the 3300. This compact bar delivers a fantastically convincing virtual surround sound by bouncing audio off the walls, and it'll pass through 4K or 3D video to your TV via HDMI.	£1000 ★★★★★	BEST FOR SMALL-ROOM SURROUND

PVRs, ETC

HOT BUY	1		Sky+HD With more than 65 channels of HD including the awesome Sky Atlantic, there's no more enjoyable way to get square eyes. Hook up your box to the web and you'll get iPlayer, ITV, 4oD and Sky Player too, while the Sky Go app is supremely slick.	from £free + £32/month ★★★★★	BEST FOR DELIVERING EVERYTHING
	2		Virgin TiVo Hardware-wise, the taste-learning TiVo is a Sky+HD-beater, but it loses out on content. Its TV Anywhere app is a neat touch, as is the addition of multi-room streaming, which allows you to share recorded content between multiple boxes.	from £free + £13/month ★★★★★	BEST FOR SMART TELLY- WATCHING
	3		Samsung STB-E7500 Still the best Freeview HD box out there, the Sammy's slick, dual-core operation, twin tuners and 500GB HDD keep it ahead of the also-rans, while its superior raft of movie-streaming services make it a real alternative to a subscription service.	£255 ★★★★★	BEST FOR SUBSCRIPTION- FREE TV

VIDEO STREAMERS

HOT BUY	1		Sony SMP-N200 Sony's near clean-sweep of this page owes much to its fantastic smart TV roster, and this 1080p-capable box has 'em all. So you get iPlayer, Lovefilm and Sony's own Video Unlimited, plus the ability to stream your own files, and all for less than a (big) night out.	£71 ★★★★★	BEST FOR SMARTING UP A DUMB TV
	2		Microsoft Xbox 360 What was once a games console is now an impressive all-in-one entertainment device, giving you Sky (live and On Demand), Lovefilm (now in HD), Netflix, iPlayer, and 1080p on-demand movies from Zune. Oh, and you can still play games on it too.	from £130 ★★★★★	BEST FOR MULTIMEDIA FUN
	3		Apple TV We're still waiting on Apple's TV set, but this box is a good start. It can stream in 1080p, access Netflix and Youtube and opens up the riches of the iTunes store. It even makes a neat, dual-screen games machine when teamed with an iOS device.	£100 ★★★★★	BEST FOR BIG-SCREEN IPAD GAMING

HOT BUY	1		Samsung UE55F8000 The world's best TV? No question. The 55in F8000 has the best picture, the smartest features, the biggest sound and the most innovative controls of any telly out there. This is a TV you'll never tire of watching – which is good, because there's plenty to watch on it: Freeview, Freesat and all the riches of the revamped Smart Hub, complete with Netflix, LoveFilm, iPlayer and more. Other highlights include the TiVo-style S-Recommendation tool and the Touch remote. Superb.	STUFF SAYS Start saving up now – the super-smart Samsung F8000 is the TV your eyes have been waiting for £2200 ★★★★★	
	2		Sony KDL-46HX853 The best TV from 2012 has been usurped from its No.1 spot by the first of 2013's sets, but don't let that put you off it. It's smart to look at and clever to live with, serving up a stunning picture, great sound and an array of on-demand and internet content.	£1200 ★★★★★	
UPDATE	3		Panasonic TX-P50GT50 With exceptional picture performance and a strong spec, the Pana's a close competitor to the Sony – and if size matters to you, its larger 50in panel may help seal the deal in its favour. The 2013 GT60 models are now out, with fresh styling and updated features.	£780 ★★★★★	
	4		LG 47LM960V With seven pairs of 3D specs in the box – two of which allow for full-screen gaming – this passive 3D TV is great for social occasions. It's now been updated with the Game World portal, featuring 2D and 3D games – some playable with LG's Magic Remote.	£1400 ★★★★★	BEST FOR 3D MOVIES WITH FRIENDS
	5		Sony KDL-32HX753 This 32in Sony's performance-orientated spec means you needn't compromise on features just because you've opted for a smaller screen. It runs at 200Hz (240Hz in 3D mode) and comes with all the smart features of its larger stablemates.	£575 ★★★★★	
	6		Panasonic TX-P50X50B Sure, you could concentrate on what you don't get – less than full HD, no Smart features, a minimum of connections – or you could fixate on a 50in plasma TV with great pictures loaded with subtle colour and fine detail – for a mere £400. Yummy.	£400 ★★★★★	BEST FOR BUDGET BIG-SCREEN FUN
	7		Bang & Olufsen BeoVision 11 Five grand for a 40in TV might seem a trifle steep, but if that's small change to you the BeoVision 11 is a luxurious delight of design and 1080p quality. It also sounds better than any TV we've ever used, and has a built-in surround processor for adding 5.1.	£4995 ★★★★★	
UPDATE	8		LG 42LM660T Last call! This 2012 model TV is now rarer than hen's teeth. If you can find one, the LG's comprehensive spec and consistent performance make it good value. Its family-friendly passive 3D tech also helps, it has the Game World portal, and it looks sharp.	£830 ★★★★★	
	9		Toshiba 55ZL2 The price is a considerable obstacle, but it's hard not to be impressed by Tosh's 55in specs-free 3D TV. Its 3840x2160 screen looks spectacular with both upscaled Blu-ray and native-res images – if you can find any. The 3D works... if you don't move.	£5000 ★★★★★☆	BEST FOR SPECS-FREE 3D VIEWING
NEW	10		Panasonic TX-L50ET60 The first 2013 Panasonic to land at Stuff Towers is an LED LCD rather than plasma, but it maintains the Japanese giant's rep for great picture quality. What's more, the boring old interface has been replaced with fresh menus that make smart TV nicer to look at.	£1200 ★★★★★☆	

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IN CASE YOU MISSED...
STREAMING MUSIC SERVICES



Bloom.fm

Efree-£10/month / bloom.fm
Bloom.fm makes every alternative look like it's not trying. It's beautifully designed, you get genre-based radio playback for nothing and can add the ability to 'borrow' tracks and store them locally. Relatively low bit-rates prevent it getting that fifth star.

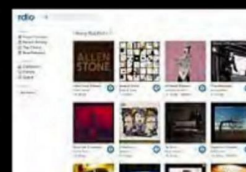
★★★★☆



Spotify

Efree-£10/month / spotify.com
Spotify's the best thing to happen to music since Westlife called it a day. It's got the most up-to-date music library of any streaming service, and it's available on more devices than any other. A fancy skin would be nice, but Spotify is close to streaming perfection.

★★★★★



Rdio

E5-£10/month / rdio.com
As close to a Spotify-beater as we've yet encountered, Rdio is well worth a spin. It looks good on both PC and smartphone with its clean, uncluttered layout making navigation a breeze. Delivery is less punchy than Spotify, but this is still a very classy experience.

★★★★★



Sony Music Unlimited

E5-£10/month / bit.ly/sonyent
A work in progress, but Sony fans will find lots to like. There's no free option, but free trials are available, after which it will cost £5 a month for PS3 and computer and £10 for Android, iOS, Vita and seemingly every web-connected Sony device that's out there.

★★★★☆

HOME COMPUTERS

HOT BUY	1		Apple iMac The latest iMac is thinner and more powerful than ever: Core i5 or i7 Ivy Bridge and at least 8GB RAM running the none-more-elegant OS X Mountain Lion. Apple has yet to embrace touchscreen tech, but why would you want to besmirch that luscious screen?	from £1025 ★★★★★	BEST FOR ALL-ROUND BRILLIANCE
	2		Alienware X51 This PC is as happy sat by a TV as it is under a desk. It's the size of an Xbox 360 but it runs a whole lot faster – and is whisper-quiet. With a Core i5 Ivy Bridge processor, 8GB of RAM and the new 1GB Nvidia GTX 660 graphics card, it's got more welly than ever.	from £570 ★★★★★	BEST FOR HARDCORE GAMERS
	3		Dino PC Mini Carnivore HTPC At the size of a year's worth of <i>Stuffs</i> , the Dino is lounge-friendly indeed, while Blu-ray, near-silent operation, low power uptake and Xbox-quality gaming belie its diminutive size. Adding the optional Intel Core i7 3770 processor (£55) will give this Dino extra roar.	from £590 ★★★★★	BEST FOR COMPACT POWER

SAT-NAV

UPDATE HOT BUY	1		TomTom GO LIVE 1005 With a spacious 5in screen and clever route calculation, the 1005 is our fave sat-nav yet. Yes, there's an added cost, but you get a free year of Live services. Look for discounts as a GO series refresh is on its way with a new look, all-new UI and screen options up to 6in.	from £240 ★★★★★	BEST FOR TOTAL TRAFFIC KNOWLEDGE
	2		Google Maps Navigation Apple's Maps app for iOS6 remains pretty, but flawed. With Google Nav now back in the iTunes Store, there really is one solid choice for both iOS and Android users and this is it. Street View, accurate public transport info, cycle maps and decent traffic warnings. Bingo.	£free ★★★★★	BEST FOR BUDGET TRAVELLERS
UPDATE	3		Garmin nüvi 3490LMT Just as we went to press, Garmin unveiled its new range. DAB-based digital traffic info claims to beat TMC into a cocked wheeltrim by being updated every minute – and no need for a live services subscription. Intriguing. They're at Halfords now; test coming.	£200 ★★★★★	BEST FOR TRAVELLING WITH STYLE

CAMCORDERS

HOT BUY	1		Canon Legria HF R48 If you're after a video box that concentrates on the things that count, the HF R48 is your cam. It lays down super-smooth 1080p@50fps footage in all conditions, has a useful 32x zoom, 32GB of internal memory, a big battery and even does a fine job with sound.	£350 ★★★★★	BEST FOR TOP-QUALITY HOME MOVIES
	2		GoPro Hero3 Silver Edition Thinner, lighter and more feature-laden than ever, the rugged Hero3 doesn't disappoint, shooting fantastic wide-angle 1080p@30fps and 11MP snaps. Alternatively, extreme videographers after 4K footage or 720p@120fps might prefer the Black Edition (£300).	£190 ★★★★★	BEST FOR ACTION-JUNKIE FILM-MAKERS
	3		Canon XA10 Canon's ultra-compact XA10 handles fine detail superbly due to its f/1.8 lens and 2.37MP chip. It might not look big enough to play with the big boys, but twin XLR inputs on its detachable handle give would-be filmmakers professional prowess straight out the box.	£1265 ★★★★★	BEST FOR SERIOUS SHOOTERS

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NOW!

HOT BUY 1		Tomb Raider PC/PS3/Xbox 360 Finished <i>Far Cry 3</i> ? Finding it difficult to see the point in life without a bow and arrow? Fear not, for Lara Croft is here and she has exactly the projectile weapon you're after. Yes, it's a Franchise Reboot, and yes, it's an Origin Story, but the well-paced mixture of puzzles, action sequences, shoot-outs and stealth make for a deeply immersive, cinematic experience. With large, highly explorable environments and a long, twisty story, this is very nearly the best fun we've had pretending to be a 21-year-old girl.	STUFF SAYS Nice to see the pneumatic Lara remade into a more believable character in this big, cinematic blockbuster ★★★★★
2		Bioshock Infinite PC/PS3/Xbox 360 From its achingly gorgeous setting in the skies to a super-intelligent story that tackles religion, racism and metaphysics, <i>Infinite</i> is an innovative <i>tour de force</i> . None of that would matter if the gameplay lagged – but it barely puts a foot wrong either. Stunning.	★★★★★ BEST FOR MIND-BENDING STORYLINES
UPDATE 3		Far Cry 3 PC/PS3/Xbox 360 Incredibly, Ubisoft has taken the 'rich white tourist goes to war on third-world islanders' premise and turned it into an enjoyable, open-world adventure. Too serious for you? Try '80s cyborg spin-off <i>Blood Dragon</i> (from £10.20, PC, PS3, Xbox). It's mad but brilliant.	★★★★★ BEST FOR OPEN-WORLD ADVENTURING
4		Dishonored PC/PS3/Xbox 360 This whale-oil-fuelled steampunk adventure is <i>Deus Ex</i> with a crossbow, and as such it's all about choice: 'ghost' the game without killing anyone, go in stabbing with your sword or use your eldritch powers to summon a swarm of man-eating rats.	★★★★★ BEST FOR HOLLYWOOD-SCALE VISUALS
5		Assassin's Creed 3 PC/PS3/Xbox 360 A huge game in every sense, with a very long central campaign, a cornucopia of mini-games and side missions, and a vast world to explore. Finished all that and thirsty for more? The final part of DLC trilogy, <i>The Tyranny of King Washington</i> , is now available.	★★★★★
6		FIFA 13 PC/PS3/Xbox 360 The field of choice for <i>Stuff's</i> office league continues to impress. The tweaks are relatively subtle, but add up to a huge advance in realism. They've even sorted out some of our gripes such as AI team-mates running offside with frustrating regularity.	★★★★★ BEST FOR MULTIPLAYER BATTLES
7		Forza Horizon Xbox 360 Previous <i>Forza</i> games were lauded for their realism, accuracy and looks. <i>Horizon</i> takes that expertise, hands you the keys and allows you to go joyriding in an open-world landscape, challenging other drivers while gunning it like a mad, cackling fool.	★★★★★
8		Ni No Kuni: Wrath of the White Witch PS3 Even if you haven't played a Japanese RPG since 1998, this charming story is worth revisiting the genre for – and if you're a fan of Studio Ghibli animation, it's a must-play. Plus, it features an amusing Welsh potato-creature with a lantern in his nose.	★★★★★ BEST FOR CHARM AND INVENTION
9		Halo 4 Xbox 360 Master Chief is back to do battle with the Prometheans. No, not the ones from <i>Mass Effect</i> . No, nor the guys from <i>Prometheus</i> . But if you're after imagination and a story, you're missing the point. If you're after weeks of brainless, alien-wasting fun... bingo.	★★★★★
10		Borderlands 2 PC/PS3/Xbox 360 The first <i>Borderlands</i> took a big gamble on its boldly original, cel-shaded animation style, and won a big pile of fans and money. The sequel looks even better, while also serving up extra helpings of humour, explosions and frenetic gunishment.	★★★★★

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HOT BUY 1		Apple MacBook Air 13in If you're an Apple fan, deciding which MacBook to buy ain't easy. The Air is more powerful than ever, with Intel Core i5 or i7 Ivy Bridge processors, HD 4000 graphics and two USB3.0 ports – yet it's still jaw-droppingly slim and sexy. But then the MacBook Pro with Retina Display (below) has more power still, plus that incredible screen and is no porker either. It's also loads more expensive, though, and while our hearts might say 'Pro', our minds (and bank managers) say 'Air'.	STUFF SAYS Tiny it may be, but the stunning MacBook Air, running the best OS out there, won't shirk big jobs £920 ★★★★★
2		Apple MacBook Pro with Retina Display Simply put, the 15-incher is the best laptop (ever) thanks to power, portability and the best screen of any laptop we've seen. The 13in model has less grunt but is a tidier size. So why No.2? Because they're both pricey, and in real life we'd go for the Air.	£1075 (13in) ★★★★★ BEST FOR EVERYTHING BAR THE PRICE
3		HP Envy 6 Sleekbook AMD Trinity processors power this Ultrabook alternative, making it cheaper and more battery-filled. The Envy 6 has a quality metal lid and rubberised base, 15.6in screen, and its 6GB RAM gives the 500GB hard drive faster boot times than a similar Intel core i3.	£430 ★★★★★
4		Acer Aspire S7 The Aspire S7 is almost the perfect Ultrabook – it matches the MacBook Air for weight, beats it for slimness by 6mm, and has a gorgeous 1920x1080 touch-friendly screen. Only its battery, which lasted a mere 5hrs on test, prevents it getting that fifth star.	£950 ★★★★★☆ BEST FOR TOUCHY-FEELY WINDOWS 8
5		Samsung Chromebook A slim, light chassis, 12-hour battery life and super-speedy operation make this low-cost netbook a winner. It's not ideal for gaming or HD videos, but most of Google's tools work offline too. Google's Chromebook Pixel has better specs but is too pricey.	£230 ★★★★★☆ BEST FOR VALUE AND PORTABILITY
6		Asus S200E The touchscreen makes it ideal for Windows 8, but the S200E's also got a top keyboard, bags of connectivity and enough power for 3D gaming. Specs aren't top notch, but with an i3 Sandy Bridge core, 4GB RAM and a 500GB HDD, it's good enough at this price.	£350 ★★★★★☆
7		Alienware M17x At 4.26kg the M17x is only really portable in theory, but it's carrying the good kind of weight – the kind that includes Radeon HD7970M graphics, an Intel Core i7 Ivy Bridge chip, and a precise 17in 1080p screen. The kind of weight that crushes modern games.	£1300 ★★★★★☆ BEST FOR SERIOUS GAMERS
8		Asus Taichi 21 This Win8 hybrid sticks a live tile-friendly touchscreen on top of a full laptop sporting Core i7 innards. You know how the saying goes: why settle for one 11.6in HD screen when you can have two? And there's now a 13-inch version too – the Taichi 31.	£1450 (i7) ★★★★★☆
9		Acer Aspire S3 There's no denying that Acer's first Ultrabook, the 13.3in Aspire S3, is invading the MacBook Air's territory: it comes with an Intel Core i7, 4GB RAM, 500GB HDD/SSD hybrid drive and HDMI. The Air is pricier, but has a sharper screen and better build.	£580 (i7) ★★★★★☆
10		Samsung 900X4C Cramming a 15in screen into a 14.9mm slim body is impressive – the quality of said screen, slightly less so. But with 8GB RAM, a 1.7GHz Intel Core i5 Ivy Bridge chip and 128GB SSD, it's a solid Air alternative. Price cuts bring it close to the Air, too.	£1010 (i5) ★★★★★☆

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+

THIS MONTH IN... 2004

Sharp LC-20S1E
£995
Stuff said Sharp has wasted no time getting its claws into the LCD TV market. This 20-inch Sharp isn't just good, it's brilliant. Picture quality is among the best you'll see on an LCD TV. There's bags of on-screen detail and the image is stable and cohesive.
★★★★★

DVD-TV-Gamer
£300
Stuff said The real world could easily be ignored with a device that not only plays DVDs, VCDs and MP3s but is also a portable TV – and a retro gaming machine. But a Game Boy Advance plus a dedicated DVD player would do the job better.
★★★★★

HP IPAQ 5550
£500
Stuff said The king of the pocket PCs might be a good deal bulkier than Palm's T3, but on paper at least it outguns Palm's flagship model with 128MB of RAM and the 400MHz XScale processor. A powerful platform that offers familiarity for Windows users.
★★★★★

Denon ADV-M71
£570
Stuff said Denon produces one of the most extensive ranges of home cinema kit today. The ADV-M71 has a powerful 32-bit surround processor, 24-bit/96kHz DACs and Dolby Virtual Speaker which provides surround sound from only two speakers. Classy too.
★★★★★

HOT BUY 1		Fujifilm FinePix X10 The X10 is the sibling of the retro-tastic X100, with old-school nods such as 8-112mm-equivalent lens, a faux-Vulcanite body cover, an engraved top plate, a threaded cable release socket on the shutter button and an optical eye viewfinder that's bigger and brighter than those on its super-compact rivals. It also has a big 2/3in sensor, which combined with the pin-sharp lens and super-fast AF provides incredible image quality. Look out for a test of the X20 soon.	STUFF SAYS Gorgeous retro styling, a superb viewfinder and fantastic photos make for a compelling package £300 ★★★★★
2		Canon PowerShot S110 Superb image quality at most ISO settings, manual controls and a new touchscreen are enough to put this truly compact snapper in the No.2 spot. And while its Wi-Fi sharing isn't as easy to use as we'd like, an update to CameraWindow should remedy it.	£230 ★★★★★
3		Sony Cyber-shot DSC-HX20V It's not the most compact of compacts but the 18MP HX20V builds on the success of the HX9V beautifully. The headline-grabber is the 20x optical zoom with serene image stabilisation and unrivalled video. A superb compact that's ready for anything.	£215 ★★★★★
4		Nikon Coolpix AW110 With a metallic body, sturdy locking mechanism and optional camo finish, our new favourite tough cam has got that whole military chic thing nailed. Its army – geddit? – of features include excellent 16MP stills, 1080p@30fps video and glove-friendly controls.	£265 ★★★★★ BEST FOR ADVENTUROUS SNAPPERS
5		Sony DSC-RX100 The 20MP RX100 is just what we're looking for in an advanced compact. Genuinely pocketable with a huge 1in sensor and customisable lens ring, it takes natural, well-balanced images and is able to shoot silky 1080p@50fps video. Top notch.	£410 ★★★★★
6		Panasonic Lumix DMC-FZ200 If you want a superzoom cam, the Lumix FZ200 wipes the floor with its rival snoopy snappers. A small and solid build is coupled with a 24x optical zoom, an excellent auto mode and spot on exposure abilities. The downside is the video, which is a mixed bag.	£370 ★★★★★ BEST FOR AT-A-DISTANCE SHOOTING
NEW 7		Fujifilm FinePix X100S Fujifilm's souped-up its fixed lens retro shooter, with faster focusing and a big APS-C sensor. It's not all new though, keeping the 35mm-equivalent f/2 lens and hybrid viewfinder that we loved from the X100. An alternative finish would be nice, mind you.	£1000 ★★★★★ BEST FOR DSLR PICS IN A SMALL BODY
8		Canon PowerShot G15 Looking for a compact(ish) camera with pro flourishes such as optical viewfinder, external flash, filter ring and manual controls? The G15 will do you proud. You'll also get crisp, clean photos with accurate colours, plus a nippy AF and a tank-like build.	£290 ★★★★★
9		Samsung Galaxy Camera The new king of snap-sharing has a 4.8in screen, Android 4.1, auto Dropbox uploads and loads of filter and editing apps. Its 16.3MP images aren't quite the best, but it's a sexy slice of the future and updates bring new scene modes including 'food'. Yes, food.	£280 ★★★★★☆ BEST FOR ON-THE-GO IMAGE SHARING
10		Canon IXUS 125 HS A surprisingly powerful camera given its tiny dimensions, the IXUS 125 HS has stripped-back controls, 5x optical zoom and no fewer than 58 different settings in auto mode. It's not one for enthusiasts, then, but neither does it compromise on image quality.	£80 ★★★★★☆ BEST FOR BUDGET BUYERS

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HOT BUY 1		Olympus OM-D E-M5 After its success in resurrecting the PEN brand, it was inevitable Olympus would emblazon the legendary OM moniker across its first compact system camera with a viewfinder. And boy, does it live up to the name. This is a CSC with pro aspirations: astoundingly fast AF, 9fps burst shooting, an excellent EVF, weatherproof body, tons of controls and superb 16MP pics right through to ISO 25,600. Best of all is the Live Time mode for a live view of long exposures. It's well-priced these days too.	STUFF SAYS The best compact system camera so far, boasting super-fast autofocus and great advanced features £765 ★★★★★ (w/12-50mm lens)
2		Canon EOS 650D Our favourite DSLR contains a hybrid 18MP CMOS sensor that enables continuous autofocus during video recording, a responsive touchscreen and 5fps burst shooting. The 700D is here but doesn't add much except a new kit lens – find a 650D and haggle.	£390 (body only) ★★★★★ BEST FOR ALL-ROUND VALUE
3		Nikon D600 Pro power has never come at such a reasonable price. A full-frame 24.3MP sensor combines with accurate 39-point autofocus for stunning results. Dual SD card slots, built-in flash and 5.5fps shooting speed complete a seriously powerful proposition.	£1250 (body only) ★★★★★ BEST FOR SHOOTING LIKE THE PROS
4		Panasonic Lumix DMC-GX1 The spiritual successor to the GF1, the GX1 is a Micro Four Thirds cam that's as satisfying for the enthusiast as it is for those stepping up from a compact. Plenty of controls and a touchscreen combine with a superb 16MP sensor for a very reasonably priced package.	£300 (body only) ★★★★★
5		Sony NEX-7 A host of manual photo and video controls are available via its gorgeously minimalist unmarked knobs, but it's the exceptional quality of its 24.3MP images that really impresses. We suspect that an updated model may be just around the corner, though.	£750 (w/18-55mm lens) ★★★★★
6		Canon EOS 60D The Canon 60D is a DSLR camera aimed at the serious amateur: a ruggedly built, feature-stuffed snapper that counts full 1080p video among its charms. An all-round great choice for the Canon user looking to step up from the entry-level models.	£470 (body only) ★★★★★
7		Canon EOS 6D Canon's cheapest ever full-framer is an awesome little SLR with a few clever tricks up its lens. As well as its all-new 20.2MP sensor, it boasts a GPS receiver for geotagging your pics and Wi-Fi for direct uploading or remote control from an iPhone or Android device.	£1030 (body only) ★★★★★
8		Sony SLT-A77 This Sony is super-capable, with continuous shooting speeds of up to 12fps, a 24MP sensor, rugged body and an absolutely stunning electronic viewfinder. Despite the A77's SLR-ish looks, it has to make do with a digital eye viewfinder rather than an optical one.	£630 (body only) ★★★★★
9		Panasonic DMC-G5 The G5 is the only snapper with the pace to keep up with the Olympus E-M5's autofocus. Beginner-friendly controls, decent 16MP pics, touchscreen control and superb full HD 60fps AVCHD video recording all add up to a compelling package.	£450 (w/14-42mm lens) ★★★★★
10		Nikon D3200 Like its D3100 predecessor, the D3200 has an excellent photography-course-in-a-camera Guide mode, although that's no longer the star attraction. This entry-level DSLR has a very non-entry-level 24MP sensor capable of producing truly professional results.	£305 (body only) ★★★★★☆ BEST FOR NEWBIE SNAPPERS

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HOT BUY	1		Amazon Kindle Paperwhite The Paperwhite's 6in touchscreen has 62% more pixels than its predecessor, giving it pin-sharp text, but all you'll care about is the built-in backlight. It's a godsend for night-time reading, and even in sunshine the always-on light makes text sharper and 'pages' whiter than ever. With a solid build, grippy rubber finish and plenty of fonts, you'll wonder how you ever lived without it. Plus Amazon's ecosystem still rules supreme. Feeling skint? The non-touch Kindle is just £70.	STUFF SAYS The best screen, the best ebook store and a light that could change reading habits – Kindle's still on top £110 ★★★★★
	2		Pebble The age of the smartwatch begins with the Kickstarter-funded Pebble. It works well as a timepiece thanks to a crisp mono LCD and customisable faces, but the fun really starts when you sync with your iThing or Android device for notifications and apps.	£100 ★★★★★ BEST FOR FUTURISTIC TIMEKEEPING
	3		Parrot AR.Drone 2.0 The second-generation of this app-controlled quadricopter boasts a 720p camera, easier control and – best of all – the ability to do flips. You don't need one, but you'll want one. A recent price drop means there's enough for a spare battery (£30) too.	£245 ★★★★★ BEST FOR WANNABE PILOTS
	4		Apple iPod Touch An iPhone without the phone, the 5th-gen Touch is lighter and thinner than ever – and it's got a 4in Retina screen, too. With iOS 6, the 5MP iSight camera, Siri, iTunes and App Store joys, this is a media device that's no longer just about playing the odd tune.	£220 ★★★★★ BEST FOR APPS WITHOUT THE IPHONE
	5		Nike Lunar TR1+ Can't afford a personal trainer? The Lunar TR1+ running shoes are cheaper, and far more intelligent. Sensors at the ball, heel and toe, plus 3-axis accelerometers record how you're moving, and an iOS app gives you feedback and workouts from top athletes.	£125 ★★★★★ BEST FOR TECHED-UP WORKOUTS
UPDATE	6		HP Envy 110 Packing all the basics plus wireless printing and AirPrint for easy use with iDevices, this whisper-quiet printer performs as smoothly as its metal and glass chassis might suggest. It's hard to find now, though, so the newer Envy 120 (£200) is worth a look.	£250 ★★★★★ BEST FOR PRINTING IN STYLE
UPDATE	7		Synology DS212J We'll be testing the new DS213J soon. Meanwhile, the DS212J persists: slot in two hard drives so you can back up your data and stream it via DLNA to TVs, consoles, tablets or phones. It's also a print, FTP, mail and iTunes server, with iOS and Android apps.	£165 ★★★★★ BEST FOR MULTIMEDIA FUNCTIONS
NEW	8		Korg MS-20 Mini If you're looking at this and thinking of a Bletchley Park switchboard – “Churchill on the line, Sir” – this might not be for you. If you're thinking “Why, that looks like a reboot of the original MS-20 synth, but with handy 3.5mm jack mixing”, you're in.	£500 ★★★★★ BEST FOR RETRO RAVERS
	9		Sennheiser X320 These gaming cans – with a noise-cancelling mic, bass boost and controls for in-game and voice channels – are aimed at Xbox 360 users. Not of the Xbox persuasion? Look out for the U 320s, which will play nicely with your PS3, PC and Mac.	£55 ★★★★★ BEST FOR GAMEWORLD IMMERSION
	10		KTM Macina Race 29 Teutonic motorbike specialist KTM serves up an MTB with a four-speed 250W Bosch motor that provides torquey pedalling assistance for up to 75 miles – albeit with an initial weight penalty. Bigger 29in wheels and quality Shimano bits keep things rolling.	£2400 ★★★★★ BEST FOR CYCLING WITH POWER

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T800
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★★★★★



T1000
The hacker's killdroid: sure, it'll mercilessly impale you with a giant needle-finger, but do some tinkering and you can upload any number of forms to it. A canoe? No problem. A sledge? Easy. How about a working bread machine? Um...

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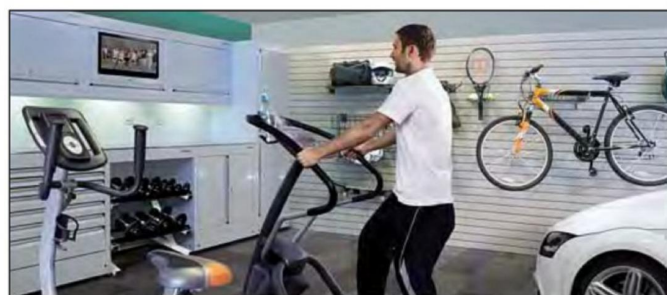
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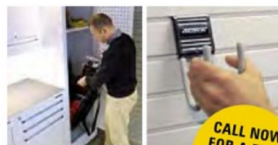
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[Words: Fraser Macdonald Photo: Amy Sullivan/PARC]

PRINTED THINKING

Looks like that Goldschläger gut rot, except silver. Except smarter. What you see there are not minute, almost valueless flakes of metal but minute, incalculably valuable micro components. And in case the bubbles haven't given you an idea of the scale, that ain't no fat beaker of bloaty microchips – it's a magnified vial of scintillatingly small silicon. Grain-of-sand small, in fact, so the plan is to assemble them using a printer. You know, like the one you use to print all those job rejection emails for your sad wall.

It's not a 'sad wall'; it's an art installation. Anyway, is this more 3D printing yawnage? No! Well, yes. A bit. See, the tiny 'chipelets' are held in a solution, and through the use of a terribly fancy printer and mysterious forces of electricity, 'printed' on to a template; the various mini hunks of processor or memory or miscellaneous widgetry finding their allotted place and snuggling in. So instead of producing large wafers of chips and cutting them up – as we do now – yes, you could 3D print an object and splodge your computing hardware on to it.

So I could have a scale model of Nelson's Column that is also a Win 8 tablet?

Bit ambitious there, lad. Think a little more humbly. The oft-mentioned thingternet, for example. Instead of net-connected boxes and sensors trying to look like ornaments, the items themselves could be thingternet devices. But the process, developed at Xerox's Palo Alto Research Center, promises still more exciting developments – flexible computer architecture using atom-thick graphene antennae to wirelessly connect disparate components. Sexy.

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